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STATE  
BOARD OF HEALTH  
OF  
FLORIDA

39<sup>TH</sup> ANNUAL REPORT  
FOR THE YEAR ENDING  
DECEMBER 31, 1938

JACKSONVILLE  
FLORIDA STATE BOARD OF HEALTH  
1940

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STATE OF FLORIDA

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Thirty-Ninth Annual Report

of the

STATE BOARD OF HEALTH

for the

Year Ending December 31, 1938

A. B. McCreary, M. D.,  
Florida State Health Officer

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FLORIDA STATE BOARD OF HEALTH  
Jacksonville, Florida  
1940

May 1, 1940

His Excellency, Fred P. Cone  
Governor of Florida  
Tallahassee, Florida

Sir:

I beg to hand you herewith a report of the Florida  
State Board of Health for the period of January 1,  
1938 to December 31, 1938, inclusive.

Respectfully submitted

(Signed)  
N. A. Baltzell, M. D., President  
Florida State Board of Health

NAB:kbk

May 1, 1940

Honorable N. A. Baltzell, M. D., President  
Florida State Board of Health  
Marianna, Florida

Dear Dr. Baltzell:

I herewith submit the 39th annual report of the  
Florida State Board of Health for the year end-  
ing December 31, 1938.

As the late Dr. W. A. McPhaul was State Health  
Officer during the period covered by this report  
and illness prevented him from preparing the  
usual summary of the administrative activities, it  
has been thought advisable to omit this feature.

Respectfully yours,

(signed)  
A. B. McCreary, M. D.  
State Health Officer

ABMcC;kbk

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## E P I D E M I O L O G Y

Dan N. Cone, M. D., Director

During the year no epidemic of any of the communicable diseases occurred in any part of the state, but there was the usual number of sporadic cases and the expected seasonal and cyclic occurrences of the various children's diseases reported to the Bureau of Epidemiology.

Disease reporting efficiency has continued to improve, considering the reportable diseases as a whole, however, some of the most important of these diseases are still far below the average, such as cancer and tuberculosis in all forms, malaria, and influenza. A list of the reported cases of notifiable diseases for the state can be found in the Appendix, Table I. This list includes the more important diseases reported in the state for a five year period 1934-1938 with the case and death rate per 100,000 population and also all the diseases reported by each county for the year 1938.

### Diphtheria\*

Diphtheria deaths were the lowest recorded for the past several years. The continuation of the program for early immunization of each child should further reduce the number of cases of sickness and deaths from this disease.

### Infantile Paralysis\*

Infantile paralysis (acute poliomyelitis) maintained the usual amount of sporadic cases with no threat of an epidemic.

### Scarlet Fever\*

Scarlet fever shows a slight increase over the five year average. Cases reported were scattered with no threat of an epidemic.

### Undulant Fever\*

Undulant fever has been reported from various sections of the state, but no epidemic occurred during the year. Since Florida

\*For number of cases reported, see Appendix, Table Ia and IB



citizens do not use goats milk and since the disease is seldom contracted by butchering an infected animal, such as cows, hogs, or goats, raw cows milk remains as the principal source of infection. At present the only known methods of prevention of undulant fever is to use milk from herds and individual milk cows that are free from Bangs disease, or drink only pasteurized cows milk.

#### Typhus Fever\*

Typhus fever (endemic or flea-born) has been reported from different localities throughout the state. The infection of this disease is carried in the blood of a person or rodent sick with the disease and transmitted to a person or rodent by a flea that infests only rodents (rats). However, pets, such as cats and dogs may act as carriers for the infected fleas. The only known method to prevent the disease is rat-eradication or rat proofing.

#### Pneumonia\*

Pneumonia in all forms causes a great many deaths each year, however, it is one of the diseases that is not being reported consistently by the medical profession.

#### Typhoid\*

Typhoid fever registered a slight increase above the five year average for cases reported, but the deaths during the same period was slightly lower. Eight typhoid carriers visited Florida from other states during the year and were under observation of their respective health departments while here. Two new carriers were also identified during the year.

\*For number of cases reported, see Appendix, Table 1A and 1B

## TUBERCULOSIS

A. J. Logie, M. D., Director

In the two years that the Division of Tuberculosis has been functioning, 22,674 individuals have been tuberculin tested, and 6,108 chest films have been made of the tuberculin reactors. In 1938, 13,692 individuals were tuberculin tested with PPD in two strengths and 4,115 individuals had x-ray examinations of their chests.

At the request of the Florida Medical Association and with the approval of the State Board of Health, a demonstration of tuberculin testing and x-ray examinations was carried out at the Florida State College for Women in Tallahassee. There were 669 freshmen students who were tuberculin tested, of which 170 reacted. Of 57 reactors who were x-rayed, none showed reinfection type pathology.

Numerous requests for the program have been received from a great number of counties which do not possess county health organizations. It has been necessary to give preference to counties with county health units, since the program could be followed up properly and since co-operation of the local personnel could be assured. Consequently, the unorganized counties have not received equal consideration in this work.

It is the intention of the division to alter this policy to some extent. When all counties with county health departments have been investigated in the manner indicated by the antituberculosis program, the work of this division will be brought into a county only at the request of the county health officer. The personnel of the Division of Tuberculosis will act in an advisory capacity and the diagnostic facilities of this department will be made available to the county health units. In this manner all tuberculosis work will be localized in the respective counties.

It is probable that the school program will be discontinued and that investigations in the future will be concentrated upon more susceptible groups, such as: indigent contacts, families on relief, and custodial patients confined to state institutions. It seems advisable to discontinue tuberculin testing temporarily until the value of tuberculin has been definitely settled in view of the conclusions in a study made recently by Dr. Lumsden of the United States Public Health Service

to the effect that tuberculin requires a standardization and the tuberculin testing appears futile as a reliable indication of the incidence of tuberculous infection.

In the future the duties of the state tuberculosis nurse will consist of instruction and advice to public health and other nurses working in the field. Special attention will be given to the follow-up of cases discovered through the antituberculosis program and cases admitted to and discharged from the State Tuberculosis Sanatorium at Orlando.

An urgent matter which requires immediate attention is the post-sanatorium treatment of discharged cases which require pneumothorax refills. There are many areas in the state where facilities for such treatment are not available within a radius of 100 miles. It may be possible that the local county health units organize tuberculosis clinics not only for early diagnosis of cases but also for adequate treatment of those who are unable to secure proper medical and nursing attention.

An invitation was extended to the director of the division by the Thomas County (Georgia) Medical Society to take part in their program as guest speaker, December 21. He spoke on "The Changing Picture of Tuberculosis". The director also presented a paper before the Florida East Coast Medical Society October 29 entitled "The Value and Significance of the Tuberculin Test", and later was elected secretary-treasurer of the Society.

The director compiled the statistics of the incidence of tuberculin reactors and x-ray findings which have been tabulated as a result of the antituberculosis program in Florida for the past two years. This study considers the tuberculin reactions in approximately 12,000 individuals tested and approximately 5,000 chest films. This article has been accepted for publication by the AMERICAN REVIEW OF TUBERCULOSIS and will be published in the March 1939 issue.

#### Antituberculosis Program in Counties

In 1938 the Division of Tuberculosis continued the state-wide antituberculosis program which was inaugurated the previous year. The program, consisting of tuberculin testing of senior high school students and all indigent contacts and suspected cases of tuberculosis, was inaugurated in eleven counties and the results are the following:

POLK COUNTY: In Polk County 2,045 individuals were tuberculin tested. The senior high school group numbered 1,989 against 56 indigent contact cases. Of the senior high school group 28.3% showed positive tuberculin reactions -- the white children 24.2% and the Negro children 42.8%. Of the positive reactors among the children were found 7 cases (4 white and 3 colored) showing radiograph-

ic evidence of reinfection type tuberculosis. All these cases were at a minimal stage.

Of the indigent contact group 76.3% had positive reactions to the tuberculin test. Seven cases were found to have manifest x-ray pathology, characteristics of pulmonary tuberculosis. There were 5 white cases and 2 colored cases in this group. Four cases are at an early stage and 3 moderately advanced.

BROWARD COUNTY. There were 352 individuals tuberculin tested, of which 306 were children and 46 were adults. Of the senior high school group 19.8% were positive reactors, of which the white children were 14.8% and the Negro children 27.3%. Of the indigent contact group, 41.3% showed positive tuberculin reactions. None showed reinfection type tuberculosis.

NASSAU COUNTY. Individuals tuberculin tested numbered 275; 68 of them showed positive reactions and of 46 reactors radiographed, none showed reinfection type tuberculosis.

ORANGE COUNTY. Individuals tuberculin tested numbered 1,341, consisting of 1,196 senior high school students and 145 indigent contacts. In the senior high school group, 31% had positive reactions -- among the whites 28%, among the colored 34%. Of the indigent contacts 64.1% showed positive tuberculin reactions.

On x-ray examination, one senior high school student showed tuberculous pathology, 16 indigent contacts had reinfection type lesions, and one indigent contact showed evidence of bronchiectasis.

LAKE COUNTY. Individuals tuberculin tested numbered 776. The senior high school group numbered 701 against 74 indigent contact cases. Of the senior high school group 27.3% showed positive tuberculin reactions -- the white children 21.5%, and the Negro children 33%. Of the positive reactors among the school children, 1 white case and 1 colored case showed radiographic evidence of reinfection type tuberculosis.

Of the indigent contact group, 54.4% showed positive reactions to the tuberculin test. Three cases showed x-ray evidence of tuberculous pathology and 1 case evidence of bronchiectasis.

ALACHUA COUNTY. Individuals tuberculin tested numbered 843. The senior high school group numbered 763 against 80 indigent contact cases. Of the senior high school group, 35.8% of the white and 46.7% of the colored showed positive tuberculin reactions. Of the positive reactors among the school children showing x-ray pathology of the chest, there was one girl with a possible tuberculous lesion and another with



evidence of upper lobe bronchiectasis. Both of these girls were white.

Of the indigent contact group, 54.7% of the white and 88.8% of the colored showed positive tuberculin reactions. Of the white cases who were x-rayed, there were three female adults with tuberculous lesions and two male adults, one having a tuberculous lesion and the other a possible lung mycosis. Of the Negro group showing x-ray pathology, there were three female adults and one male adult with evidence suggestive of pulmonary tuberculosis.

DADE COUNTY. Individuals tuberculin tested numbered 1,720. The Senior high school group numbered 1,685 against 62 indigent contact cases. Of the senior high school group, 33.1% of the white and 38.4% of the colored showed positive tuberculin reactions. Of the positive reactors among the school children showing x-ray pathology of the chest, there were two Negroes (males) with possible tuberculous lesions.

Of the indigent contact group consisting of adults, 78.9% showed positive tuberculin reactions. Of the white cases which were x-rayed, there were three females and one male with lesions suggestive of tuberculosis.

JACKSON COUNTY. There were 722 individuals tuberculin tested, of which 570 were children and 152 adults. Of the children tested, 144 showed positive reactions (25.3%). Of the positive reactors among the children who were x-rayed, none showed tuberculous pathology of the reinfection type.

Of the adults who were tested 56 showed positive tuberculin reactions (39%). Of the adults with positive reactions who were x-rayed, 6 (12.8% of the positive reactors) showed tuberculous pathology.

GADSDEN COUNTY. Individuals tuberculin tested numbered 629, of which 535 were children and 74, adults. There were 191 children (35.7%) who had positive reactions to the test. Of the children with positive reactions, 162 were x-rayed and 2 (1.2% of the positive reactors) showed x-ray evidence suggestive of tuberculous pathology.

Of the adults who were tuberculin tested, 56 showed positive reactions (59.5%). There were 43 adults with positive reactions who were x-rayed, of which 5 (11.6% of the positive reactors) showed x-ray findings suggestive of tuberculosis, and 3 with evidence of bronchiectasis.

WAKULLA COUNTY. There were 357 individuals tuberculin tested; of which 191 were children and 166, adults. Of the children tested, 59.2% showed positive tuberculin reactions. Of the positive reactors, 2 (1.7% of the positive reactors) children showed tuberculous pathology on x-ray.

Of the adults tested, 54.9% showed positive tuberculin reactions and 6 (6.6% of the positive reactors) of them showed tuberculous pathology on x-ray.

MONROE COUNTY. There were 188 individuals tuberculin tested, of which 156 were school children and 32, adults. Of the children tested, 56.2% were positive reactors. Of the positive reactors among the children, 4 (4.5% of the positive tuberculin reactors) showed tuberculous pathology of the reinfection type on x-ray. Of the adults tested, 83% had positive tuberculin reactions, and 11 (69% of the positive reactors) showed definite tuberculous pathology on x-ray.

#### Summary of Activities

Interviews and conferences	93	Tuberculosis cases	
Public addresses	43	investigated	361
Newspaper articles	42	Tuberculin tests	13,692
Radio talks	4	Pneumothorax clinics	
Schools visited	35	developed	6
Chest clinics developed	8	Medical society meetings	24
Clinics attended	24	Counties inviting program	64
County programs (antituberculosis) developed	11	Lectures to nurses and physicians	27
Persons examined (x-ray)	4,115	Papers to medical society	12

## VENEREAL DISEASE CONTROL

L. C. Gonzalez, M. D., Director

The division of Venereal disease Control was created July 1, with the financial assistance of the United States Public Health Service, as provided in the Federal Venereal Disease Control Act of May 24, 1938. Besides the director of the division, the personnel is composed of an assistant education director, a colored venereal disease consultant and a secretary.

The purpose of the division is to coordinate and aid all venereal disease control work done by individual city and county health departments and voluntary organizations; to seek improvements of present clinic facilities; to promote the organization of those facilities in localities where there are none; to work in harmony with and seek the cooperation of private physicians in order to encourage better reporting; to furnish free drugs to practitioners for the treatment of indigent patients; and to promote an extensive and consistent state-wide educational program as it affects venereal disease.

With these objectives in mind, a program was prepared and approved by the State Board of Health and is to be presented before the Venereal Disease Committee of the Florida Medical Association, so as to secure their assistance and endorsement.

The first quarter of the division's existence was devoted to organizational work. This consisted of the outlining of the duties of the personnel; allocating funds to health departments, as provided in the budget; conferring with public health officials, the chairman of the Venereal Disease Committee of the Florida Medical Association and other numerous private physicians; visiting clinics and institutions taking part in this work and launching a state-wide educational campaign.

As requested by the United States Public Health Service, a roster of venereal disease clinics operating in Florida was compiled. All these clinics were requested to send in monthly reports of their activities, most of whom have responded wholeheartedly.

The distribution of arsenicals was relegated to this division. It has also been entrusted with statistical analysis of the morbidity re-

ports, which are increasing rapidly.

The director of the division has visited all health departments and explained the program fully. He has conferred with city and county officials and other interested citizens in order to secure financial assistance to expand venereal disease work in their respective communities. He has appeared before numerous lay organizations and has explained the program to them.

During the month of October, the director, together with the state health officer, the director of laboratories, and two serologists, attended the United States Public Health Service sponsored conference, "The Evaluation of Serodiagnostic Tests", in Hot Springs, Arkansas.

The assistant educational director toured the state, contacting local authorities, civic organizations and newspapers, acquainting them with the program and distributing metal placards on syphilis to combat quack advertisements.

The colored venereal disease consultant also toured the state, and conferred with colored physicians and other leading citizens of his race and presented lectures before large groups in all sections of the state.

During the Florida Public Health Association meeting held in Hollywood, November 28-30, 1938, the cooperation of all public health nurses was requested in giving more serious consideration to follow-up work.

This concludes the major activities for the year. The organization has taken root and it is hoped that future narratives will show evidence of a healthy growth.



## PUBLIC HEALTH NURSING

Ruth E. Mettinger, R. N., Director

Continued emphasis on a generalized public health nursing program characterized the activities of the Bureau of Public Health Nursing for the year 1938. Administration was carried out through the five districts into which the state is divided and each district had a supervising nurse and a corps of assistant nurses, most of whom were paid by WPA. Although nursing service carried on in such large districts lacking any other health supervision is necessarily limited, the nursing corps was able to be of considerable benefit to the populations served.

Working with the district medical officers from the State Board of Health, the nurses assisted in immunization programs among school children, both for smallpox and diphtheria. Thousands of children and adults were tested for hookworm and treatment given by private physicians. Follow-up of this sanitation problem was done both by the nurses and the district sanitary officers of the State Board of Health, and through their efforts a fair number of sanitary privies were built throughout the state.

In those counties having full-time local health service, the work of the nurses was, of course, much more effective. It is possible to see permanent, beneficial results from the nursing program in such counties and the detailed reports made by the various county health units will show this effect.

Since health education seemed to be the greatest need for all nursing services, the Bureau of Public Health Nursing invited national agencies to conduct and participate in several institutes during the year. The first institute on health teaching was directed by Miss Mary J. Dunn, R. N., Regional Consultant from the U. S. Public Health Service, and was held from January 4 through 7 in the State Board of Health Library. All units were represented by two or three nurses, making a total of forty-five in attendance. The basis of Miss Dunn's instructions was a well-rounded service, meeting all the nursing needs of the family, and the method which each nurse should follow in teaching this need, regardless of environment.

Immediately following this institute, Miss Dunn conducted a two-day institute for supervisors only. This outline was based on (1) qualifications for the supervisor, (2) introduction of the nurse into the field, (3) staff education, and (4) records.

The part which Home Hygiene and Care of the Sick has played in the nursing service demanded institutes on methods of teaching as applied to Home Hygiene and Care of the Sick and these were conducted by Mrs. Charlotte Heilman from the American National Red Cross. These institutes were held in six series at strategic points throughout the state.

Due to the many demands made for classes in First Aid, a representative from the American National Red Cross also conducted a series of three institutes for nurses who qualified to teach this course. These later received certificates in First Aid.

Requests for exhibits demonstrating the "Home Delivery Room", "Proper Sanitation Around the Home", "Maternity Mortality", "Infant Mortality", "Syphilis", "Tuberculosis", and also "Highway Safety" were received from practically all health units, as well as from interested individuals in unorganized counties. Each county to which the exhibits were loaned was requested to submit a report of the number of people who viewed the exhibit and the total number amounted to 32,281.

Miss Jule O. Graves, State Midwife Consultant, held fourteen one-day midwife institutes, at which time nurses were requested to attend and observe her method of teaching the midwives. Through funds from the Rockefeller Foundation an observation tour was given Miss Graves and she visited five different states, remaining in each from three to four days. During these visits she had the opportunity to go into the field with the midwife supervisor and to review the records and forms used by each department.

In connection with the health education program of the bureau 804 infant booklets, 767 prenatal booklets, 283 booklets entitled "The Child from One to Six" were mailed to interested parents throughout the state. The maternity letters to prenatal and postnatal cases numbered 3,434. Numerous requests were made for pamphlets on tuberculosis, hookworm and malaria and these were referred to the Bureau of Health Education and Division of Tuberculosis.

At the request of the Works Progress Administration the nursery schools were visited and the children inspected either by the local nurse in the county or the district nurse. A total of 4,067 white children and 778 colored were inspected.

In addition to the nursery schools the WPA sewing rooms were visited and the women inspected. Cases referred to physicians because of some physical defect or some communicable disease numbered 1,097.

\*See Appendix, Table II

May Day celebrations were carried out in various forms in each county and unit. The county public health councils which have been quite active the past two years assumed full responsibility of this program. These councils also sponsored Social Hygiene Day.

In connection with the Social Hygiene Day activities the publicity kits furnished by the American Social Hygiene Association were distributed to each district supervisor of nurses. Several venereal disease clinics were organized in the counties and treatment given through local physicians as a result of this intensified campaign and it is believed the many programs on venereal disease prevention given by the county nurses were directly responsible.

The public health nurses were urged to assist the teachers in planning programs in health education and to attend the parent and teacher meetings. They also assisted other civic organizations in planning their programs, and in counties having full-time health units their service became the connecting link between the public health officials and the people. In counties not having local health service they played an important part in promoting better health protection for the community they served.

## MATERNAL AND CHILD HEALTH

F. V. Chappell, M. D., Director

The Bureau of Maternal and Child Health was organized early in 1936 through funds made available to the state under provisions of the Federal Social Security Act. The financial assistance thus obtained, matched with an equal amount of funds from the state appropriation for public health has enabled the bureau to carry on an ever expanding program each year since its organization.

During 1938 a maternal and child health consultant nurse was added which gave the bureau another opportunity to assist the local health departments in the better organization of their Maternal and Child Health activities. This nurse, on invitation of the health officers, goes into the organized counties for from one to several weeks and has been of much help in all the counties visited. Another maternal and child health consultant nurse will be added next year to assist those counties already organized with full-time health service and to help organize the program in the several new counties which will be organized during the year.

The activities of the bureau are carried on almost entirely in those counties with local health departments, for it is believed very strongly that without the proper supervision and follow-up which is available in organized local health departments the money and effort expended will not be used to best advantage.

During 1938 seventeen counties with local health services held 125 maternal and 46 well-baby clinics at regularly scheduled times and places each month. These clinics were held at 45 well equipped permanent Health Centers throughout the counties in the areas of greatest need.

Most of these clinics are conducted by local practicing physicians who are specialists either in pediatrics or obstetrics, or whose practice is devoted largely to one or both of the specialties. During the year 60 of these physicians were paid for their services in these clinics. A few of the clinics, particularly those held in areas where local medical services are not available, were held by the director of the local health department.



A list of the maternal and child health activities carried on throughout the state as reported to the United States Children's Bureau will be found in the Appendix, Table III.

Early in the year the Maternal Welfare Committee of the Florida Medical Association requested this bureau to assist them in a survey of all maternal deaths during the year. This was done and due to the very excellent cooperation of the Committee and all of those reporting maternal deaths, everyone of these cases will have been completed and reported on early in 1939. The material obtained will be most valuable and should prove a great help to the Committee in their study as to the cause of Florida's high maternal mortality.

The bureau also assisted the Committee on Postgraduate Education of the Florida Medical Association financially in the postgraduate courses held at Daytona Beach. All expenses incident to bringing an obstetrician, a pediatrician, and a gynecologist to the state for these courses were paid for by funds from the United States Children's Bureau.

It is planned during the next year to continue to assist the Maternal Welfare Committee of the Association in the conduct of the survey of maternal deaths in the state; to strengthen the Home Delivery Nursing Service which is carried on in Hillsborough County as a demonstration by adding an additional delivery nurse and make provisions for the employment of an obstetric consultant to be called upon when needed at deliveries in this area; and to add additional demonstrations, not as a separate unit, but to be carried on as part of a generalized public health program in two or three well organized counties where this service will be most valuable.

It is hoped to expand and strengthen the local health services by adding additional nursing personnel to be paid from the Children's Bureau funds, to allow more money where it is needed for medical and dental services and to improve those records and report forms having to do with maternal and child health activities.

~~Refresher~~ Courses are being planned throughout the state for the year 1939 and it is hoped to bring in as instructors outstanding men in the field of pediatrics and obstetrics to conduct these courses. The courses will be held under the direction and supervision of the Committee of Maternal Welfare, Child Health and Postgraduate Instruction of the Florida Medical Association, and as in the past the Bureau will assist financially the Committee on Postgraduate Instruction of the Association.

Other objectives for 1939 are: to arrange for the public health nursing training of a number of the nurses through funds from the Children's Bureau; to improve the midwife laws; to gather material and make

plans for placing the responsibility of maternity hospitals and homes with the health department; and to add a full-time pediatrician to the staff to consult with the private physicians and directors of the local health departments on the better conduct of the clinics.



## DENTAL HEALTH

Lloyd N. Harlow, D.D.S., Director

The Bureau of Dental Health was without a director during most of the first quarter in 1938. Doctor E. C. Geiger tendered his resignation as director to enter private practice, and the present director assumed his duties on April 1.

It was necessary to become familiar with the work of the bureau by studying the program used in the past and the programs used by other states. A trip was made to North Carolina to observe the work of the Division of Oral Hygiene in that state. The method of conducting the office, materials used and method of distribution were observed. Visits were made to county health units over the state and their programs studied.

In Florida, county health units were visited and a study made of existing conditions in each one. These counties all cooperated splendidly in the dental health work and in each county where inspections were made, the county made all arrangements for the inspections and the educational program.

A program for demonstration purposes was carried on in Wakulla County. This county was selected because of its high percentage of indigents and because of the county's not having a dentist. Approximately 200 children were given dental services which consisted of fillings, extractions, and treatments. The plans are to re-examine and make corrections for these children during their school days in the intermediate grades. Classroom attendance and improvement in studies are to be noted year by year. The local physician and the health department are cooperating in looking after the other health needs of the children.

Conferences were held with the dental organizations of the state, and in each instance it was urged that clinics for the underprivileged children be held. The director feels that unless some method is found to care for such children the educational program of the bureau will not be of the maximum benefit.

During the year, approximately 14,000 children were examined. From these inspections, it was found there was an average of 75 per cent of the Florida children defective in dental health. These run-

ning from a high of 89 per cent in some counties to 53 per cent in Pinellas County. Elementary schools visited with the inspection programs numbered 250. Classroom talks on dental health education were made in each school visited.

The director attended the meetings of the American Association of Public Health Dentists at St. Louis, Missouri, the American Dental Association, and the American Association for Promotion of Dentistry for Children. The meetings of the American Dental Association Committee on Public Health were also attended. Eight meetings of district dental societies were attended in the state as well as many local meetings. The Florida State Dental Society which was devoted entirely to the public health aspects of dentistry, and the Public Health Dentistry meeting at Augusta, Georgia, were attended.

Papers on dental health were given by the director at five district dental society meetings. Many other were given to local and county dental societies. Talks were made to the district nurses and many parent-teacher association and other civic organization meetings. Materials were given to the teachers attending summer school at the University of Florida, and the requests received from these teachers for dental literature were more than gratifying.

Prenatal and postnatal letters on dental health were rewritten and distributed with the cooperation of the Division of Public Health Nursing. Inexpensive formulas for a tooth powder and a mouth wash, together with instructions on the proper method of caring for the teeth, were included in these letters.

More than 10,000 copies each of the booklets, "Five Little Pigs" and "Jimmie Chew", were distributed to the children in the first two grades. The dental health song, "Billy Boy", was distributed to each classroom. The booklet, "Dentistry and Public Health," was distributed to each teacher and copies left in the library of every school visited. Many copies of the materials used were supplied to schools not visited when the materials were requested by the principals or county superintendents.

Dental health exhibits were displayed at a number of county fairs during the year, and some new exhibits are now being prepared for use at the various fairs this coming year.

Too much credit cannot be given the Bureau of Health Education, the Division of Public Health Nursing, the Bureau of Engineering and the Central Organization of County and District Health Work for the cooperation they gave this bureau in conducting the dental health program during the year. The Bureau of Health Education cooperated in sending advance publicity to the communities in which the dental health program was to be conducted. This publicity caused a better response from

the school authorities which made the carrying out of the program much easier. The cooperation of the Division of Public Health Nursing in distributing letters and in assisting in the inspections was very much appreciated.

It is planned to continue the program along educational lines with more time to be spent on the preschool child. Arrangements have been made for holding preschool clinics.

A great deal of time was spent in studying the possibilities of a future dental health program which would be of the maximum benefit. Much credit is given the Florida State Dental Society and all its component societies for the splendid cooperation given and their work in planning such a program.

## DISTRICT AND COUNTY HEALTH WORK

A. B. McCreary, M. D., Director

At the end of the year 1938 the Central Organization of District and County Health Work saw established in sixteen counties of the state fifteen full-time county health units. The counties now having full-time health service are Broward, Duval, Escambia, Franklin, Gadsden, Gulf, Highlands, Jackson, Hillsborough, Lake, Leon, Monroe, Orange, Pinellas, Taylor, and Wakulla. Lake and Duval Counties were the newcomers to this group.

The Lake County Health Unit was organized in July as a result of the activities of the Lake County Medical Society and many civic organizations. Without their interest and cooperation this full-time health service for Lake County could not have been realized. The unit is located at Tavares and since its beginning has been active in organizing a well-balanced health program.

The Duval County Health Unit, located in Jacksonville, was organized in November. The campaign for this unit was carried on intensively through the cooperation of various civic organizations and particularly through the assistance of the Jacksonville and Duval County women's clubs. This unit has been established one month, so it is too soon to report on the progress of this unit, however, the interest evinced in establishing the unit is a guarantee that progress will be rapid and of permanent benefit.

The expansion and supervision of adequate local health service is the primary function of this bureau and during 1938 ground work was laid for many other units. It is hoped that it will be only a matter of time before every community in Florida will have adequate full-time health service.

The director of the bureau addressed many organizations during the course of the year, the outstanding ones being the Florida Medical Association's annual meeting held in Miami on May 10 and the Florida District Convention of Rotary on April 27 at Ocala. The paper read at the 167th District of Rotary at which every Rotary Club in Florida was represented, was entitled "What Price Ignorance"; the subject of the paper read before the Florida Medical Association was entitled "The



### Final Responsibility of Public Health Rests on the Medical Profession".

Most of the individual county health units issued their own reports for the year 1938 and it is not the purpose of this report to attempt to tabulate their activities except to say that public health programs in those counties having full-time health service has been rapid.

One of the greatest problems faced in the promotion and organization of health service in the counties was the raising of funds in the local communities for the support of public health. Florida has an Enabling Act, passed at the 1931 session of the Legislature, which empowers county commissions to levy two mills on all taxable property for the support of the cooperative health unit. This fund is added to funds from the state and Federal government and is earmarked as the county unit fund to be expended only in the county making such provision. In some of the counties where there was considerable difficulty attending the collection of funds which were pledged by various groups and municipalities within the county, every effort was made to place the county on a more stable basis through convincing the commissioners of the necessity of operating under the Enabling Act and levying two mills for the support of the unit.

Florida is still relying somewhat upon the loosely woven district scheme of dividing the state into five districts, each district having a health officer, a sanitary officer, a public health nurse and a clerk. As these districts comprise from twelve to fifteen counties embracing a very large area and more than 300,000 population, it is entirely obvious that such a set-up is inadequate to administer health protection to such a large and populous area. Consequently, the efforts of these district health organizations during the year accomplished no more than could be expected with such limitations.

There has been a renaissance of public interest throughout the state and the public is eagerly grasping for information regarding conservation of health and prolonging of life. Through this interest the bureau is directing every effort toward an extensive program of expanding full-time health service in Florida. The support of the medical profession has been state-wide and it is hoped that through this continued cooperation that the very best in public health can be given the people.

### LABORATORIES

J. N. Patterson, M. S., M. D., Director

The annual report of the activities of the Bureau of Laboratories for the year 1938 is submitted in tabular form below and also in Tables IV through XIV in the Appendix.

Table I summarizes the various ways in which work was distributed among the five laboratories. There was a gross increase of 12.5% over last year in the number of tests performed which increase was shared by all laboratories with the exception of the branch laboratory at Tallahassee. The slight decrease in the amount of work performed by this laboratory was due to two conditions, namely: first, illness of the bacteriologist necessitating a transfer of work to the central laboratory for a period of three weeks and, second, discontinuance of the Kahn test which will be mentioned later.

TABLE I  
Examinations made in the laboratories  
during the year 1938

LABORATORY	DIAGNOSTIC	MILK AND WATER	TOTAL
<u>CENTRAL</u>			
Jacksonville	229,245	9,832	239,077
<u>BRANCHES</u>			
Tampa	75,324	4,560	79,884
Miami	67,964	6,636	74,600
Pensacola	20,491	862	21,353
Tallahassee	15,185	386	15,571
<b>TOTAL</b>	<b>408,209</b>	<b>22,276</b>	<b>430,485</b>

Table II on the next page shows the distribution of the work in the different laboratories by months. Examination of the chart reveals a striking seasonal variation in the work of the Miami laboratory. The marked variation noted in the Tallahassee laboratory report can be accounted for by vacation and illness of the bacteriologist, both circumstances requiring sending of the work to the Jacksonville Laboratory. The decrease in the number of tests performed in the two smaller laboratories during December was due in a large part

to the discontinuance of the Kahn test and a transfer of this work to the central laboratory.

TABLE II  
Total number of examinations made  
by months during the year 1938

	JACKSONVILLE	TAMPA	MIAMI	PENSACOLA	TALLAHASSEE	TOTAL
January	18096	6663	9080	1312	1423	36574
February	18755	6495	6237	1497	1453	34437
March	20755	8282	6014	1805	1450	38306
April	19932	7026	5114	1950	1312	35334
May	19846	6505	4668	1926	1756	34701
June	19093	5804	4530	2365	1471	33263
July	19838	5616	4438	1837	1538	33267
August	20766	5786	4750	2377	2016	35695
September	22583	6211	7234	2389	810	39227
October	19643	7032	6487	2088	1433	36683
November	19728	7316	7508	1165	717	36434
December	20042	7148	8540	642	192	36564
TOTAL	239077	79884	74600	21353	15571	430485

Table III (on opposite page) lists the monthly distribution of biological products. The seasonal incidence of the different diseases can be determined by a study of this table. There has been a moderate decrease in the quantity of diphtheria antitoxin used during the year. A charge of \$6.00 per complete course of 14 antirabic treatments has been made to all patients, with the exception of indigents. The amount collected for these treatments during the year was \$1575.00.

#### Syphilis

A very substantial increase will be noted in the number of specimens submitted which are tabulated in Table IV in the Appendix. This increase of approximately 50,000 specimens over the preceding year is no doubt due in a large part to the extensive campaign conducted against syphilis by the United States Public Health Service, the State Board of Health and other agencies. The increase actually amounts to approximately 100,000 tests as both the Kahn standard three tube test and the Kahn presumptive test is done on every specimen received.

TABLE III  
Biologicals distributed during 1938

	Diphtheria Antitoxin		Schick	Toxoid	Typhoid Vaccine	Vaccine Virus	Anti-rabic Virus	Purified Protein Derivative Tuberculin			
	10000 units	5000 units						100 test pkgs 1st str.	10 test pkgs 2nd str.	10 test pkgs 1st str.	10 test pkgs 2nd str.
JAN	36	13	3510	2290	5184	3110	145	3		45	37
FEB	54	13	3220	3590	1976	1452	82	12	15	30	42
MAR	48	39	7520	2410	2688	3205	112	21	21	20	20
APR	46	23	7790	4290	3160	3603	139 $\frac{1}{2}$	30	31	12	19
MAY	23	7	3960	1035	2632	3162	173 $\frac{1}{2}$	1		31	21
JUNE	9	14	1530	539	2992	1097	133	5	5	33	26
JULY	43	1	1680	1180	4648	1056	125			22	23
AUG	100	5	4750	1015	3240	2072	73	5	5	28	22
SEPT	73	7	7010	6431	4960	2506	71	5	7	42	37
OCT	36		12110	5350	1928	3184	106	21	20	54	41
NOV	78	10	4380	2760	1424	2330	106	2	7	23	23
DEC	30	16	5280	3910	424	2096	115	26	24	56	43
TOTAL	576	148	62740	34800	35256	28873	1381	131	135	296	354

However, as the specimen is only reported Kahn positive, doubtful or negative, the two tests are recorded as one. Actually 484,702 Kahn tests were performed.

In some laboratories the presumptive test is used as a screen test and the standard test is only performed on those specimens giving a positive presumptive test. However, the laboratories of the State Board of Health do both tests on each specimen, for although in the majority of cases, the presumptive test is more sensitive than the standard test, an occasional case is encountered in which the presumptive test is negative and the standard is positive. If the presumptive test were used solely as a screen test those occasional cases of syphilis would be missed. The laboratory relies mainly on the standard 3 tube test for the reading and uses the presumptive test chiefly as a technical check and as an additional criterion in establishing the absence of syphilis.

During the last month of 1938 the performance of the Kahn test was transferred from the Pensacola and Tallahassee laboratories to the cen-



tral laboratory. This change was made because this test can be performed more accurately in a larger laboratory where many tests are run each day and where the technicians are uninterrupted while performing this test. Then too, the work at both of the smaller laboratories had been too heavy for one technician but not heavy enough for two. This change should lighten the burden on the bacteriologist and allow her more time to devote to the performance of other laboratory procedures.

A new report form, which follows, has been adopted giving both the old and new terminology and the laboratory's interpretation of the result.

#### INTERPRETATION

##### New Terminology

##### Positive

A diagnosis of syphilis should not be made on a single positive serological reaction alone. If the serological result is not supported by the history, signs and symptoms, an additional specimen should be submitted as a check examination. If the repeat test confirms the original, syphilis is indicated with a high degree of probability.

##### Doubtful

Neither makes nor rules out alone the diagnosis of syphilis. If in conjunction with a known history of syphilis and particularly if the patient has been under treatment it may be considered as positive evidence of syphilis. If there is no history or clinical evidence of syphilis, one or more specimens of blood should be submitted for check examination. A provocative injection of neo-arsphenamine may be tried, and samples of blood taken on the 2nd and 7th days should be sent to the laboratory for examination.

##### Negative

A negative serological report does not exclude syphilis. Frequently

##### Old Terminology

+++ or ++

++

+ or -

positive reactions are not found in the primary stage or after treatment has been instituted. If there is any reason to suspect syphilis, another sample of blood should be submitted for examination.

The central laboratory entered the Evaluation Test conducted by the United States Public Health Service. The following quotation is taken from a letter addressed to Dr. W. A. McPhaul, State Health Officer, by Dr. J. F. Mahoney, Senior Surgeon, United States Public Health Service and Director of the Venereal Disease Research Laboratory:

"The result of the performance of the Kahn standard test in the Florida State Laboratories was well above the average of other participants reporting this procedure. You have no doubt noted the high degree of agreement between your reports and those from Dr. Kahn's laboratory. This is probably indicative of adherence to the procedure prescribed by Dr. Kahn himself and should encourage the laboratory force in their efforts to perform a standard technique in a standard manner."

#### Agglutination Test

The agglutination procedure has been completely revised and a technique has been adopted which employs the essential principles of the test as used by the National Institute of Health in Washington and the laboratories of the Board of Health of Maryland. Miss Pearl Griffith, Bacteriologist in Charge, Mr. R. L. Robertson, one of the bacteriologists in the central laboratory, and the Director of the Laboratories worked out the procedure now in use. The antigens for these tests are made by the laboratory from cultures obtained from the National Institute of Health. These antigens are checked for purity and also for specificity of reaction and antigenic quality. Negative and positive controls are always set up as a check.

Physicians are asked to submit 5 cc of blood in the agglutination specimen container and to specify clearly the particular test or tests desired. The physicians are urgently requested to send whole blood or blood sera and to discontinue sending dried blood. Accurate dilutions are not possible with dried blood, but are easily made with blood serum and hence an accurate estimate of the agglutinin content can be obtained. The macroscopic agglutination tests now performed by the laboratory are much more time consuming than the older microscopic agglutination tests, but the accuracy of the results more than justify the added expenditure of time. It is hoped that in the near future the laboratory will be able to do routine culturing of the blood clots on specimens submitted for agglutination tests.

Macroscopic agglutination tests are now being used in the central laboratory as an aid in the diagnosis of typhoid fever, paratyphoid fever, A & B, undulant fever, tularemia, typhus fever and Rocky Mountain spotted fever. Both the 'H' (formalin killed) antigen and 'O' (alcoholized emulsion) antigen is used in the diagnosis of typhoid fever. These tests will be performed in the branch laboratories shortly after the beginning of the new year. Results of these tests are reported by titre on the new agglutination report blanks. An interpretation of the titre and a general discussion on agglutination tests are given on the back of these blanks. This interpretation is given below:

Titre of:

Typhoid (Widal)	(1-40 or less no significance)
Paratyphoid A & B	(1-60 suggestive)
Undulant Fever	(1-80 or 1-160 and up usually diagnostic)
Tularemia	
Brills (Weil-Felix)	(1-80 or less no significance)
	(1-160 suggestive)
	(1-320 and up usually diagnostic)

The result of agglutination tests should be interpreted by the physician only with a full knowledge of the clinical course and the history of the patient, especially with reference to previous vaccination. Great care must be exercised in the interpretation of vaccinated individuals. The test should be repeated, at least in all doubtful cases, in order to secure an index of the rise or fall of the agglutination titre. A rising agglutination titre is strong evidence of that particular disease being present but not absolutely diagnostic of it.

Agglutination tests in general do not lend themselves to early diagnosis since agglutinins do not develop as a rule until the disease has been present for one to three weeks. It is believed by many authorities that the presence of 'O' typhoid agglutinins is indicative of infection whereas the 'H' typhoid agglutinins arise in most instances from vaccination so that a rise in the titre of the serum a-

gainst the 'O' antigen (living or alcoholized emulsion of typhoid bacilli) has more significance than does a rise in the 'H' antigen (formalin killed typhoid bacilli).

#### Bacterial Examination of Water

The bacterial examination of water and shell fish was transferred from the Bureau of Sanitation to the Bureau of Laboratories March 1, 1938. Miss Lena Starck, Bacteriologist, who has performed this work for many years continued doing this part-time under the supervision of director of the laboratories. On July 1, 1938, she was transferred for full-time duty to this department. She now does the bacteriological examination of water, milk and shell fish and keeps all records of this work. Over 500 water samples were examined per month following in strict detail the procedure outlined in "Standard Methods for the Examination of Water and Sewage" as published by the American Public Health Association. In fact, the laboratory goes considerably further than they prescribe, in differentiating between the colon and areo-  
genes group.

#### Chemical Analysis of Water and Sewage

A chemist has been added to the laboratory staff and a room has been set aside for chemical analysis. The chemist, S. W. Wells, is a graduate in chemistry of the University of Florida and has taken post graduate work in water chemistry from Dr. A. P. Black of the University of Florida.

Chemical investigation on the efficiency of operation of water and sewage treatment plants over the state in conjunction with surveys conducted by the Bureau of Engineering is a major function of the chemical department. In addition, chemical examinations are necessary in checking pollution of waters to determine their suitability for public uses and determining required treatment for new water supplies, sewage and industrial wastes. Naturally, only investigations of a public health nature are performed by the chemist.

#### Special Work

One of the first duties of the new director of the laboratories was to investigate the so-called "cancer serum" deaths in Orlando in which eleven out of thirteen people stricken lost their lives. The director performed autopsies on five of the victims, the other six bodies having been embalmed before the seriousness of the situation was fully realized and aid from the State Board of Health requested.



It was definitely proved by the autopsies and by extensive animal experimentation, properly controlled, that these patients died from tetanus (lockjaw) toxin present in two series of vials of the so-called cancer serum administered by a practicing physician in Orlando. The findings were announced three days after beginning the animal experimentation and two days later the findings were confirmed by the laboratory of the National Institute of Health, Washington, D. C. Dr. W. G. Workman of the U. S. Public Health Service spent one day in Orlando and took a portion of the so-called "cancer serum" back to Washington with him.

This toxin was present in the vials of cancer serum sent out by a biological company of Philadelphia, Pennsylvania. It was further proved by animal inoculation and artificial cultivation that no *Clostridium tetani* were present in the serum. Further investigation revealed that the so-called serum was made from beef digested by *Clostridium histolyticum* for seven days and then passed through a Berkefeld filter. *Clostridium tetani* were introduced with the *Clostridium histolyticum* or were present in the beef previously and the organisms (but not the toxin) were removed by passage through the Berkefeld filter.

The director of the laboratories gratefully acknowledges the valuable assistance cheerfully rendered by Miss Homer Harris, Superintendent of the Orange General Hospital, Dr. H. A. Day and other physicians of Orlando. Especial thanks are given to Mr. Louis C. Herring, Technician of the Orange General Hospital for his very able and untiring assistance.

#### Physical Equipment

Much of the laboratories' equipment is worn and in need of replacement. This is the case in all the laboratories, but it is particularly evident in the Miami laboratory. In this laboratory alone the following new equipment is needed: large centrifuge, water bath, electric refrigerator, binocular microscope, Kahn shaking machine and a typewriter. The other laboratories need new equipment, but not as urgently nor in as large a quantity as the Miami laboratory.

All of the laboratories performing the Kahn test should be equipped with an automatic pipetting machine to facilitate obtaining maximum speed with dependable accuracy. Quebec colony counters should be purchased for each laboratory to speed up and make more accurate the milk and water counts. A large lead vat is needed in the washroom for cleaning Kahn tubes in acid solution. A large drying oven has been added to the washroom in the central laboratory. Two new binocular microscopes have been added to this laboratory. All of the laboratories have received pipettes, petri dishes, glass slides, etc., as needed.

#### Personnell

The staff, both technical and clerical is grossly overworked in all of the laboratories except in the two smaller branch laboratories in Tallahassee and Pensacola. Their burden has been lightened by transferring the serologic specimens to the central laboratory. The Miami and Tampa laboratories each need an additional technician and typist. The central laboratory needs three additional technicians and two typists. Because of insufficient personell the technicians are required to work overtime practically every day. The washroom force in the central laboratory needs two additional workers. If it were not for the help rendered both clerical and menial by the N. Y. A. and the W. P. A. the work would of necessity be greatly curtailed.

A satisfactory classification and salary scale for the laboratory personnel must be worked out in the near future. As a whole the laboratory workers are greatly underpaid in comparison with those of other departments. In most instances workers in other departments do not compare in educational qualifications nor does their work require the technical skill needed in laboratory procedures. The very nature of the work requires constant alertness and vigilance by the laboratory workers for their personal protection. It is hoped that these glaring inequalities will soon disappear and that the laboratory workers receive a salary commensurate with their training, ability, quality of work and length of service.



## DRUG INSPECTION

M. H. Doss, Chief Inspector

The Division of Drug Inspection, Narcotic Service, attempts to restrict the sale, prescribing and dispensing of narcotic drugs strictly to those qualified from a health and educational standpoint to do so. During the year 1938 the Division arrested 32 persons; 27 of these were convicted in criminal courts and the cases of 5 are pending. Violations corrected without legal action numbered 26.

By order of the State Board of Pharmacy the licenses of 3 pharmacists were repossessed and two pharmacists were reported to the Board for permitting violations in their stores.

Unregistered physicians investigated by the State Board of Medical Examiners under authority of the state narcotic law numbered 8.

During the year the matter of naturopathic physicians prescribing, dispensing and possessing narcotic drugs was contested by appealing to the Honorable George Couper Gibbs, Attorney General for the state of Florida. An opinion was rendered to the effect that naturopathic physicians were not qualified according to Section 1, subsection 2 of the State Uniform Narcotic Drug Act. Therefore, such physicians were disapproved with the United States Collector of Internal Revenue in and for the state of Florida, as well as the Federal Bureau of Narcotics.

A hearing was requested by the naturopathic physicians before Attorney General Gibbs and this was held on September 8, 1938, in Tallahassee, at which time several naturopathic physicians and their attorneys, the state health officer, Dr. W. A. McPhaul, and the chief inspector of the Division appeared. The Attorney General's former opinion was affirmed and the case was appealed to the United States Southern District of Florida Court, presided over by the Honorable Louie W. Strum. This action was taken under a mandamus proceeding, however, in effect, Judge Strum ruled with the Attorney General. The case is now pending before the United States Circuit Court of Appeals.

## VITAL STATISTICS

Edward M. L'Engle, M. D., Director

It is a physical impossibility to prepare vital statistics tables and an analysis of the figures for the year covered by the annual report of the State Board of Health. It has, therefore, been thought advisable to publish the full report of the Bureau of Vital Statistics in a separate volume covering statistics for the year 1937. This report has been completed and sent to health officers, government agencies and libraries throughout the country. It will be sent on request to interested persons as long as the supply lasts.

There is included herein only a narrative report of the activities of the Bureau of Vital Statistics for the year 1938. During the year the records of the Bureau of Vital Statistics were increased by the filing of 33,930 birth certificates; 22,487 death certificates; 24,903 marriage licenses and 8,438 divorce reports. The total on file at the present time of each of the above is 707,877 birth certificates; 449,962 death certificates; 231,125 marriage licenses and 59,228 divorce reports -- a total of 1,448,192. These records are indexed, bound and kept in fire proof vaults in the new building of the State Board of Health at Jacksonville.

### Certified Copies

During the calendar year 1938, there was a total of 9,714 certified copies issued, of which 911 were issued without charge to government agencies and for the purpose of supplying information needed in connection with the Uniform Veterans' Guardianship Act of 1929 as is provided by an act of the legislature.

### Notices to New Mothers

A total of 29,729 notices of birth registration were issued to new mothers. This is done in all cases where the original certificate is filed within the statutory limit. Such notices are not issued in case of the filing of delayed certificates. With each such notice is included a small printed sheet advising each mother to have her child protected against diphtheria.

### Annual Registration - Healing Arts

For 1938, 3,071 persons holding licenses to practice in Florida were registered. Of these, 2,215 were doctors of medicine, 389 doctors of osteopathy; 193 doctors of chiropractic; 169 doctors of naturopathy and 105 chiropodists.

Some idea of the routine work required of a bureau of this kind may be gained from the following figures. 105,765 original records and 102,874 index cards were numbered; 114,593 index cards were typed; 34,561 letters, packages, etc., were prepared for mailing; 64,424 miscellaneous reports were prepared and mailed; 35,127 monthly reports were received and checked; 6,555 divorce reports were posted; 38,054 photostats were made, numbered and checked; 126,983 addressograph plates were run through the addressograph; 115,025 mimeograph sheets were imprinted; 104,967 cards were punched; 82,773 punch cards were verified by the key verifier; 6,782,553 punch cards were sorted by machines. This does not by any means include all the activities of the bureau but will serve to illustrate the volume of routine work performed during the year 1938.

There is an increasing realization of the value of birth certificates. More and more, different departments of the state and Federal government are requiring such certificates for various purposes concerned with the increased activities of both the state and Federal government. This is shown by the greatly increased requests for the filing of delayed birth certificates. This is an activity which requires a great amount of correspondence, sometimes extending over as much as two years before proof satisfactory to the State Board of Health can be furnished for the filing of such certificates. Where the application for permission to file such a certificate shows that either parent is foreign-born, the rule of the bureau requires proof from the Bureau of the Census that the facts relating to the date and place of birth can be verified from that source. While it is felt that the opportunity should be given those, who for one reason or another have had no birth certificate filed at the proper time, to be provided with such a certificate, it is equally important that the integrity of the records be maintained by requiring satisfactory proof of statements made by the applicants.

The work of the bureau has very greatly increased during the past few years and is almost certain to continue to increase; not only because of the greater population of the state which the bureau must serve but also because of the demands made by the Social Security Board, the State Welfare Board and other official organizations. Some more satisfactory plan should be worked out for serving these agencies than that now in force. It would seem reasonable that Federal and state agencies should make available directly to the Bureau of Vital Statistics funds for the employment by it of additional personnel to serve their needs.

### MULTIGRAPHING

E. F. H. Ganten, Operator

The increasing demand for the printed word as a medium of health education is felt not only in the bureaus and divisions concerned with this problem, but also in the multigraphing department of the State Board of Health. Here the actual increase can be seen by studying the volume of work done.

As in previous years the multigraphed sheets continued to outnumber the mimeographed sheets (3,255,081 sheets multigraphed and 400,333 sheets mimeographed), but in the matter of printing forms which are used by the bureaus the mimeographed forms outnumbered the multigraphed forms (1,719 forms mimeographed and 742 forms multigraphed), as this means of printing forms was found to be less expensive. Other figures showing the amount of work done by the department can be found in the Appendix Table XV.

Besides multigraphing and mimeographing forms and sheets the department supplies the bureaus and divisions with individual letterhead stationery and envelopes. Other paper supplies are also ordered through the department and the centralization of these orders has brought about a great reduction in cost.

The various county health units and the district health departments throughout the state are also served by this department. Their annual reports, forms, letterheads and stationery are printed in this office, which saves these departments with limited personnel much time and expense.

It is believed that an increase in the full-time personnel of the department would result in greater efficiency and quicker service, however, the part-time workers loaned by the WPA and the NYA have greatly assisted in meeting the demand for more efficient service. The equipment of the department could also be modernized and by the addition of newer machines the printing of the various bulletins, pamphlets and reports could be made more attractive.



## ENGINEERING

George F. Catlett, Director

At the beginning of the year 1938 the usual duties of the Bureau of Public Health Engineering were divided between a Bureau of Engineering and a Bureau of Sanitation. About the first of July, the Bureau of Sanitation was abolished by the Board of Health and all duties taken over by the Bureau of Engineering.

Personnel connected with the Bureau at the end of 1937 consisted of the Director, an Assistant Engineer on Water and Sewage, J. Huston McClane, and a Secretary. There was also provided by the U. S. Public Health Service from a special appropriation for technical supervision of W. P. A. Community Sanitation and Malaria Control Projects, an Assistant Director, A. C. Newman; a Draftsman, N. S. Thayer; and four District Supervisors, C. R. Bill, W. W. McPhaul, C. R. Fox, and J. B. Miller.

On the first of January, Russell Broughman was transferred from the Bureau of Sanitation as Assistant on Malaria Control Drainage Work, and J. W. Wakefield added as Assistant Engineer on Sewage and Stream Pollution. In March, C. L. Richardson, Shellfish Inspector, was transferred from the Bureau of Sanitation to act in the same capacity. In that same month, Miss LaVerne Tompkins was added to the Bureau as Clerk-Stenographer.

July 1, with the abolition of the Bureau of Sanitation, the following were added to the Bureau of Engineering from that Bureau:

F. A. Safay (former Director, Bureau of Sanitation)  
Dr. A. H. Williamson, Milk Sanitation Specialist  
T. W. Miller, Special Sanitary Officer  
Mrs. Florence Van Caeyzelle, Clerk-Stenographer  
J. H. Ruge, Sanitary Officer  
D. I. Sigman, Sanitary Officer  
F. C. Moor, Jr. Sanitary Officer  
C. A. Holloway, Sanitary Officer  
S. D. Macready, Sanitary Officer

On that same date, due to a decreased appropriation to the U. S.

Public Health Service, A. C. Newman, Norman Thayer, and C. R. Fox terminated their services on technical supervision of W. P. A. Projects, and Messrs. Newman and Thayer were added to the Bureau's organization, the former as Assistant Engineer on Malaria Control Drainage, and latter as draftsman.

Following the July changes, the bureau was organized as follows:

G. F. Catlett, Director  
J. H. McClane, Assistant Engineer, Water & Sewage  
J. W. Wakefield, Assistant Engineer, Water & Sewage  
Russell Broughman, Assistant Engineer, Malaria Control Drainage  
A. C. Newman, Assistant Engineer, Malaria Control Drainage  
A. H. Williamson, D. V. M., Milk Sanitation  
C. L. Richardson, Shellfish Sanitation  
F. A. Safay, Assistant on Sanitation

### Sanitary Officers

J. H. Ruge	C. A. Holloway
D. I. Sigman	S. D. Macready
F. C. Moor	T. W. Miller

### Supervisors W. P. A. Community Sanitation and Malaria Control

C. R. Bill	J. B. Miller	W. W. McPhaul
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On September 1, J. Huston McClane left the State Board of Health and only one assistant was available on water, sewage, and stream pollution for the remainder of the year.

The five resident district sanitary officers were continued through the year as in past years.

With the decrease in appropriation for supervision of W. P. A. projects, the state had to be divided into three districts instead of four. A. C. Newman continued to give general supervision over malaria control projects and supervision over community sanitation was transferred to F. A. Safay.

### Public Water Supplies

Due to the fact that little has been done by the State Board of

Health for some years on the technical phases of water supplies and water purification plants, this field demands a large amount of detailed field work with municipal authorities and plant operators. Samples from the supplies are examined regularly by the Bureau of Laboratories, to whom the work was turned over in July, 1937. Unless there is a correlation of this work in the field, however, its value is very questionable. From the first of the year until leaving in September, J. H. McClane devoted practically his entire time to visiting the water plants in the state, studying the problems in detail and working with the operators of the purification works.

Plans for construction, alterations, and extensions to 17 public water supplies were investigated and approved during the year: Lakeland, Port St. Joe, Miami, Mount Dora, Mayo, Bradenton, Sarasota, Macclenny, Umatilla, Haines City, Palatka, Melbourne, Pinellas County, Gainesville, Miami Springs, Jacksonville, and Fort Pierce.

#### Private Water Supplies

Proper check on private water supplies is almost impossible except where there is a local health organization. To properly appraise the safety of a water supply, it is absolutely necessary to make an investigation on the ground, and laboratory samples must be taken by a person familiar with the work. Large numbers of requests are made for laboratory examinations of private waters, and if laboratory examinations are made without field surveys, many dangerous supplies will not necessarily show pollution at the time of sampling. For this reason, attempt has been made to get a field investigation by the district sanitary officers. Fortunately, most requests of this nature are not of an emergency character and the sanitary officer makes his investigation upon his next visit in that vicinity. This should be done, or the Bureau of Laboratories refuse to attempt such service.

#### Bottled Water Supplies

Due to the high mineral content of most of Florida public water supplies, there is quite a demand for bottled waters, and permits were issued for 52 bottling plants in the state and for 5 located out of the state. Before issuing permits to out-of-state plants, approvals were obtained from the state authorities where they were located.

There is a distinct and serious public health danger in these bottled waters. If the source of the water is not a well protected one, the cleaning and sterilizing of containers not properly done,

and the bottling carried on under sanitary conditions, a serious epidemic may easily result.

#### Public Sewerage Systems and Sewage Disposal

Every effort has been made to promote extension of sewerage systems, and plans for 20 sewer extension projects were investigated and approved. At least that many more extension projects were carried out, but no plans submitted for approval. A defect in the statute prevents the securing of complete submission of plans for all projects. It is hoped that this defect may be corrected by the next legislature.

When Florida was made up only small towns and there were no large, congested areas, disposal of sewage was a simple matter. Under present conditions some serious problems now exist and they are increasing in number. At Miami and Tampa there is quite a need for sewage treatment. Orlando, Ocala, and one or two small communities are discharging sewage into the underground water supplies and something should be done about this.

The two sewage treatment plants at Pensacola were put into service, and Assistant Engineers McClane and Wakefield spent several weeks working with the operator. Plans were approved and work started on a similar plant at Clearwater. At Umatilla plans were approved for additions to the septic tank. At Lakeland work was started on a high rate trickling filter to follow the primary treatment already in use. Frostproof also remodeled their disposal plant. Plans were approved for: Escambia Farms, Edgewood Court, Virginia Park, Highland Hammock Park, Lakeland, Ft. Clinch Park, Key West, Marianna, Frostproof, Clearwater, Goldhead Park, Gainesville, Lake City, Pensacola, Sulphur Springs, Umatilla. Industrial waste disposal was approved for the National Container Corporation, Jacksonville, and the Fernandina Pulp & Paper Company, Fernandina, Florida.

#### Stream Pollution

The major part of the work of Assistant Engineer Wakefield during the year was on stream pollution studies. Most of this work was done in connection with areas condemned for taking shellfish and the pollution maps for this purpose were revised. Extensive studies were made at Fernandina, Pensacola, Daytona Beach, Vero Beach, and Fort Pierce. Work was also done in the vicinity of Tampa in connection with the watershed from which Tampa's water supply is taken, and on the lower part of Hillsborough River and Hillsborough Bay in connection



with sewage disposal difficulty. Some studies were also made on Biscayne Bay. In addition to making the field surveys and collecting samples, 2323 water samples were examined in the laboratory. Of these, Assistant Engineers Wakefield and McClane did the laboratory work on 2080 samples, and the Bureau of Laboratories handled 243 samples. This work is time-consuming and considerable of it should be done.

At Pensacola and Miami, work was done in connection with the pollution of bathing beaches, but the entire Biscayne Bay area needs to be surveyed and studied in relation to the disposal of Miami's sewage.

During the year, Miami Beach completed a sewer outfall 7,000 feet into the ocean. Although such would not be feasible elsewhere in the state, the proximity to the Gulf Stream and the nature of the ocean currents, make it permissible here. Approval was given provisionally. If beaches are affected by pollution, treatment is to be added.

#### Malaria Control Drainage

With the beginning of the year, an assistant was added to work on malaria control drainage, and in July, A. C. Newman who had been in general charge of W. P. A. Projects was transferred to the regular personnel of the bureau, and Mr. N. S. Thayer, draftsman, was similarly transferred. Steps were taken to organize this work and interest the county health units in developing a program of malaria control.

The International Health Board of the Rockefeller Foundation offered to cooperate with the State Board of Health in the malaria control work in the state. Following conferences with them, it was decided to set up in a county a model program where efficient malaria control work could be demonstrated. Escambia County and the City of Pensacola agreed to endorse the plan and contribute to its support, and this county was selected for the demonstration. A budget was adopted, one-third each being contributed by the International Health Board, the State Board of Health, and Escambia County with the City of Pensacola. In addition, the I. H. B. contributed the services of Dr. J. E. Elmendorf, Jr., as Director. Sanitary Engineer, David B. Lee was transferred from the State Board of Health central organization to this budget.

With the addition of engineering personnel for malaria control work, progress in this field was still handicapped by the lack of epidemiological personnel to work with them. In any effective malaria control program it is necessary that epidemiological studies

be first conducted and the malaria definitely located. This is followed by entomological surveys locating the mosquito breeding places responsible for the malaria transmission. Then, and only then, can drainage and other control measures be designed to produce effective results.

Practically all malaria control drainage accomplished during the year was with the W. P. A. projects. These however, had to be confined to areas where there was a local health organization to make the work effective. Even where there were such organizations, the health officer was not able to do the preliminary epidemiological work to gain the best results.

Many requests were made for the State Board of Health to sponsor so-called malaria drainage projects, as no W. P. A. projects for this purpose was eligible without sponsorship of the State Board of Health and a much larger amount of W. P. A. labor could have been utilized. However, it was explained in each case that no such work could be worthwhile without the supervision of a health unit.

The following work was accomplished:

#### NEW WORK:

Main channel ditches:	418,537 lineal feet	177,098 cubic yards
Laterals:	133,631 lineal feet	32,618 cubic yards
Man hours:	1,087,126	Water surface drained: 275,871,039 square feet

#### RECLAIMED DITCHES:

Main channels:	606,031 lineal ft.	Water surf. dr.:	202,142,553 sq. ft.
Laterals:	117,886	" " " "	54,088,498 sq. ft.
Man hours:	319,318		

FILLS: 36,616 cubic yards. 342,846 square feet

Man hours: 38,569

Team or truck hours: 1,833

AVERAGE NUMBER MEN WORKING EACH WORK PERIOD..... 595

#### Post Mosquito Control

Post mosquito work is, of course, not public health work, and no provision was made in the budget for work in this field. The bureau, however, cooperated as far as possible with local authorities on this work. An extensive W. P. A. project was sponsored for the City of

Tampa and some supervision given them. The bureau also cooperated in trying to promote a mosquito district for this locality, but the plan was discarded locally.

#### Aedes Aegypti Control

The State Board of Health contributed \$15,000 towards an aegypti control program in the City of Miami, the city and county putting up a similar amount. This work was conducted under the supervision of Mr. F. A. Stutz, Superintendent, Dade County Mosquito Commission. Accomplishments are contained in Mr. Stutz's annual report.

#### Milk Sanitation

The entire time of Dr. A. H. Williamson was devoted to milk sanitation. The work of the bureau was concentrated on the passage of the Standard Milk Ordinance of the U. S. Public Health Service which is recommended by the State Board of Health. Where such ordinances are passed, efforts are made to insure its enforcement and to advise with the local authorities and generally supervise the work. Dr. Williamson reports on his activities as follows:

"Surveys conducted throughout 1937 showed conclusively that the great majority of the 37 cities which had adopted the U. S. P. H. S. Milk Ordinance were not enforcing its provisions. A great many were operating under old editions of the ordinance which in a good percentage of the cases dated back to 1932. It was ascertained that this let-up in milk control was due to several factors. One of the principal reasons was that the State Board of Health had not been actively engaged, on a scale of any magnitude, in milk control work in several years and the program suffered because of lack of promotion. Another factor greatly influencing the situation was that only a few full-time county health departments had been established at this time and the majority of the cities which had adopted the ordinance did not have full-time city health departments and a good percentage had no health department at all. Local sanitary officers were not trained in milk control work and in a great many cases had abandoned their ordinance and were depending upon other agencies to "carry on". It was quite evident that very little improvement could be made until more ground work was laid.

"The bureau strategy was to salvage as many of the programs as could be salvaged and prevent the adoption of the ordinance by additional towns and cities which could not enforce it. The towns in the last mentioned classification (about 18 in number) which had al-

ready adopted the ordinance were left to their own devices and the remaining 19 were concentrated upon.

"During the first few weeks of the year the U. S. Public Health Service collaborated with the Alabama Polytechnic Institute at Auburn in putting on a short course in milk control work. The writer attended this session and prevailed upon Dr. Franklin A. Clarke, the service representative at the short course, to return to Florida and help in injecting new life into the milk program. Dr. Clarke surveyed the principal cities of the state and gave timely counsel regarding the handling of the individual problems as well as assisting in setting policies which would help further the interest of the Standard Ordinance.

"He particularly stressed "need of pasteurization" and pointed out the vast majority of the so-called "pasteurized milk" was improperly processed and/or handled. The percentage of milk pasteurized in the smaller cities was ridiculously low, averaging about 26%. The percentage of pasteurized milk in the larger cities was considerably higher, but still far below the desired level, the average being about 68%. Pasteurization plant machinery operators were unskilled in the majority of instances, especially in the smaller plants, and consequently pasteurization was improperly done and records improperly kept.

"At first attempts were made to go into each individual plant and instruct the owners in its operation, and where full-time or sufficiently trained inspection personnel was not available. Dr. Clarke pointed out that detail work on the part of the State Board was inadvisable and suggested that the board concentrate its efforts on training local personnel and leave detail work to them. This policy was adopted. The press, the schools, the lecture platform, and motion pictures were all used in reviving interest in local programs and in "pasteurization" programs particularly.

"Seven Florida cities improved their programs to the extent that they merited inclusion in the "satisfactory" list of standard ordinance cities. These cities were: Miami, Coral Gables, Ft. Lauderdale, Hollywood, Pensacola, Perry, and Pompano. The other 12 cities on which the bureau concentrated their efforts made phenomenal improvements in their individual programs, but not sufficient to merit inclusion in the list.

"Survey results were, in each case, sent to Washington and the ratings were figured in that office. Follow-up work was done by the State Board of Health after each survey and this was, in the writer's opinion, largely responsible for the continued interest of local in-



spection personnel in their programs and the ultimate improvements made in the local milk supplies. The state has endeavored at all times to stay in the background and let all programs remain local. It is believed that any other policy is inimical to the best interest of the Standard Milk Ordinance.

"A 'Standardization Survey' of state work was made by the Government in March of this year. The purpose of this survey was to determine the capabilities of state inspection personnel. Nearly two hundred individual dairies were surveyed by the State and Federal inspectors. The inspections were made, using the U. S. Public Health Service Milk Ordinance and Code as the yard stick, and using Standard Inspection Forms for collecting data. The inspections of each dairy were made simultaneously, with each inspector unaware of the findings of the other. The data obtained by each inspector was then sent to Washington where the ratings were completed. A maximum variance of 5 percent in the state and federal rating was permitted for the state work to be considered satisfactory. When the ratings were computed in Washington and sent back to the State Health Officer, the average variance on 'Raw', 'Raw to Plant', and 'Pasteurized' Milk was found to be 2 2/3%.

"A Milk Seminar was held in Memphis in May. This meeting was sponsored by the U. S. Public Health Service and was attended by the majority of state inspection personnel of the southern states. A great many local inspectors also attended. The changes which had been made by the advisory committee in bringing the old Ordinance up to date were studied at length, as were the technical phases of pasteurization. Newly developed pasteurization equipment was also studied and the phosphatase test came in for its part of the discussion. Sessions were long, but interesting. Plans were made to continue the idea of sectional meetings of this kind and Atlanta was advanced as the next logical meeting place in the south.

"In June, the Bureau of Animal Industry intensified its drive to rid the state of tuberculosis and bangs disease. The State Board of Health cooperated with this agency and the State Livestock Sanitary Board in furthering this work. Mastitis came in for its share of attention. Only little headway has been made, however, in the control of mastitis. This test is not mandatory at this time in many city ordinances. Broward County was the first and only county health department to incorporate this provision in ordinances which it recommends for adoption. Fort Lauderdale, Hollywood, Dania, and Pompano ordinances now require this test. The health of the herd has heretofore been neglected throughout the state and a strenuous effort is continuously being made by this bureau to direct attention to and em-

phasize the importance of this phase of milk control. Every new ordinance drawn requires systematic tests for tuberculosis, bangs, and mastitis.

"Educational work pertaining to practical farm sterilization has continuously gone forward. Steam and chemical sterilization efficiency has improved materially through this effort, but supplementary treatment of fixed equipment is far from satisfactory. Much more educational work pertaining to this needs to be done, but effective educational work must be done by sanitarians trained in the basic principles of milk sanitation. It is worthy to note that the only cities making a satisfactory showing are located in counties having a full-time county health department with the exception of Miami and Coral Gables. These sheds are combined and are controlled by Miami which maintains an adequate and well qualified staff of dairy supervisors. This statement should not be construed to mean that all cities not operating under the U. S. Public Health Service Milk Ordinance and which are not located in counties having full-time county health departments have unsatisfactory milk supplies. It simply means that their milk sanitation status has never been determined by the state or federal government."

#### Shellfish Sanitation

C. L. Richardson, Shellfish Inspector, was transferred from the Bureau of Sanitation to the Bureau of Engineering in March. Mr. Richardson, however, devoted his attention entirely to oysters, clams, and scallops, the cooked seafood---crab, lobster, and shrimp meat---being handled by the Sanitation Bureau. On July 1, however, all this work was concentrated under Mr. Richardson. Oyster shucking houses in the state were in quite a deplorable condition, so much so that the U. S. Public Health Service threatened to discontinue approval of our permits for interstate shipment of these products. At the request of the bureau, Senior Sanitary Engineer, L. M. Fisher in charge of this sanitary district, U. S. Public Health Service assigned Mr. Fletcher of his staff to make inspections of Florida oyster packing houses. Mr. Fletcher in company with Mr. Richardson listed the deficiencies of each plant from the list of 67 permits that were issued by the State Board of Health the previous season.

A letter was then written to each holder of a permit by the Bureau Director, enclosing the list of deficiencies found at his plant. He was formally notified that unless these deficiencies were remedied and the regulations complied with, a permit would not be issued for the coming season. The general reaction to this ultimatum was the complaint that the State Board of Health had made such statements



before and where a number of dealers had spent considerable money on their plants, permits continued to be issued to those complying and those not complying. By personal interviews it was possible to convince dealers that this time the State Board of Health meant what it said.

In the majority of cases compliance meant rebuilding, or practically rebuilding of the plant. The shellfish inspector worked with them, personally showing how defects were to be remedied and how plants should be built and the proper equipment purchased. At the end of 1938 only 52 permits had been issued and there was general compliance with regulations. Fifteen or more plants went out of business as the owners were convinced that they were not financially able to continue in the business.

Crab, lobster and shrimp meat plants were similarly improved, this work being started in 1936 with gradual improvements since then.

During 1938 the following permits were issued:

Oyster houses.....	52
Scallop houses.....	5
Crab & Lobster Meat Plants.....	40

Frequent and systematic inspection of all these was necessary to keep them up to regulations.

#### Swimming Pools

A state statute makes it a misdemeanor to operate a swimming pool or bathing beach without a permit from the State Board of Health and this board is empowered to make regulations for the control of such. The bureau issued permits during 1938 for 80 swimming pools, after inspection and recommendation by the district sanitary officers.

Florida was one of the pioneer states on swimming pool sanitation, but as progress has been made along this line in recent years it has not been followed. Regulations need revising and requirements such as accepted bacteria content standards included. Little has been done in regard to bathing beaches due to lack of required personnel.

#### Tourist Camps

Florida being a tourist state has an abnormal number of tourist and trailer camps. Occupants of these camps come from almost every

state, and there is a public health hazard in connection with them. A state statute makes it a misdemeanor to operate a tourist camp without a permit from the State Board of Health. The statute, however, does not cover trailer camps, according to rulings of some local courts and prosecuting officers, though the bureau has included these in the work on tourist camps.

During 1938, permits were issued to 499 tourist and trailer camps after inspections by district sanitary officers. The sanitary officers have spent a very large proportion of their time on such camps. In some sections, especially in south Florida, camps are in most excellent condition. This is somewhat influenced by the patronage to be catered to. Where there is a large demand for tourist camp facilities, owners are able to build very high class camps. In sections of the state where patronage is small, the poorly equipped camps are found.

#### Food Canning Plants

During the time that Mr. E. L. Filby was state sanitary engineer, attention was called and numerous complaints were made of insanitary conditions found in food canning plants in the state. Arrangements were made for regular inspections of these, and regulations passed by the Board of Health with permit required for their operation. This work has been continued since then and in 1938, 126 permits were issued for canning plants after inspection by sanitary officers.

Recently an investigation by the U. S. Public Health Service showed severe cases of dermatitis on hands and arms of peelers and sectioners in citrus canning plants. A survey by the Bureau of Engineering showed quite a prevalence of this, and shows a need for more inspection and regulation.

#### W.P.A. Community Sanitation Projects.

W. P. A. projects for use of their labor in the building of sanitary privies have been continued during the year 1938 as previously. Since the W. P. A. only supplies labor to build these devices it is necessary to have some other agency promote the construction of the privies in the community. Where there is a local health organization the work fits well into their program. In other cases, municipal officials have arranged for cooperation. District sanitary officers have assisted to some extent, but their other duties and the wide area they have to cover makes it difficult.

Congress has been making a yearly appropriation to the U. S. Public Health Service for technical supervision of such projects. This fund is used to furnish personnel to the various state health departments in proportion to the number of W. P. A. workers engaged in the work. For the fiscal year 1937-38 the appropriation was \$1,300,000; for the fiscal year 1938-39 this was reduced to \$500,000. Until July 1, there was available in Florida a general supervisor, an office engineer, and 4 district supervisors. On July 1 this personnel was cut to an amount not sufficient to pay 3 district supervisors and State Board of Health funds were used to complete the salary and travel for the three. Later the general supervision was assigned to Mr. Safay.

Results may be tabulated as follows:

Average No. men working.....	424
Maximum counties operating.....	30
Minimum " " .....	24
(All counties except 1 operating from Central Plant)	
Privies constructed:	
Wood slab.....	862
Concrete slab.....	4232
At homes.....	4984
At schools.....	110
Privies repaired.....	1012
Septic tanks.....	3

#### Drainage Wells

A state statute forbids the discharge of any waste water into the underground water sources of the state except by permit from the State Board of Health. It has been the policy to refuse all such permits for the disposal of sewage, and all other wastes where some other means of disposal can be found. The largest number of permits has been issued for storm water in the Miami area, and in Orange and Polk Counties. As there is considerable hazard to water supplies in this practice, permits have only been issued after careful investigation.

#### Water Supplies and Sanitation of Interstate Carriers

For some years this, and other State Boards of Health, have co-operated with the U. S. Public Health Service in checking the water supplies, milk, seafood, and general sanitary conditions surrounding railroad trains, steamships, busses, airplanes, and all passenger car-

riers. As the Public Health Service is responsible for this in interstate travel, inspections are made and reports made to the Service. They, in turn, issue certificates to the carriers. This work is quite extensive in Florida, and with additional personnel furnished through Social Security funds, the Service appropriately asks for more complete service in this connection. However, in 1938, only district sanitary officers were available for the work and one inspection only was made. It is planned to make this more complete next year, using engineer personnel.

#### Industrial Wastes

Florida not being an extensively industrial state, the problem of disposal of industrial wastes is not so extensive. The chief problem is in connection with citrus canning plants. A large number of these plants are located in the lake section of the state where no streams are available for disposal. The liquid wastes from these plants are very high in biochemical oxygen demand and when discharged into lakes cause nuisances. Recently, the solid wastes--peel and rag--have been utilized to manufacture a stock feed. This remedies the difficulty in disposal of these solid wastes, but a liquid waste from the stock feed is many times more concentrated than the ordinary canning plant waste.

A solution of this problem requires research work, and a contract was made by the State Board of Health, U. S. Department of Agriculture, and Florida Canners Association to conduct such research. The Canners Association appropriated \$1500; the State Board of Health designed the experimental plant and furnished plans with engineering consultation service; and the U. S. Department of Agriculture agreed to operate the experimental plant and make necessary laboratory determinations under Mr. H. W. von Loesecke in charge of Citrus Experiment Station at Orlando. It is hoped that under this plan a treatment method may be worked out for canning plants to utilize. Under the statute the State Board of Health has responsibility for protection of lakes from pollution, but must have a practicable method of treatment to specify to the canners in disposal of these wastes.

These studies do not include the stock feed wastes as the Canners Association is not interested in this. Considerable experimentation has been made by this bureau, in cooperation with the owners, in order to work out some method of dewatering the waste which is a sludge approximating a sewage sludge. However, there is little space available at most of the plants, and the plants are close to built-up communities. Odors and insect breeding make such dewatering beds impracticable. As the waste does not contain matter with potential com-



municable disease organisms, a permit was given the Suni-Citrus company, at Haines City, to discharge this waste into a drainage well. The permit is to be revoked if any effect is shown on water supplies, and the company bear the cost of the experiment.

Florida has five paper mills in operation or being built. These are: sulphate mills at Port St. Joe, Panama City, Jacksonville, and Fernandina, and a sulphite mill at Fernandina. The sulphate is a recovery process with only a small amount of cooking liquor going to waste; in the case of the sulphite process, all digestive liquor is discharged as waste. At Panama City and Port St. Joe waste is discharged into the St. Johns River. At Fernandina, the sulphate mill has constructed a holding basin from which waste is discharged on outgoing tide only. The sulphate mill at Fernandina is to discharge into an ocean outfall, with a provisional approval from the State Board of Health.

#### District Sanitary Officers

For years the Bureau of Engineering has had field representatives resident in districts, so as to economize in travel expense. None of these have been technically trained men, however. The bureau now has five of these with headquarters at (1) Marianna, (2) Jacksonville, (3) Ocala, (4) Bartow, and (5) West Palm Beach. In 1934 there were five health districts set up with an office and a health officer and clerk. The Bureau of Engineering districts were altered to conform with these health districts and sanitary officers attached to these offices. However, on instructions from the State Health Officer, the sanitary officer continued to function as field representatives of the Bureau of Engineering and operated directly under the bureau director.

They have been used mostly for inspecting and checking tourist camps, swimming pools, bottled water plants, home water supplies and excreta disposal, nuisances and reporting to the bureau activities that require technical attention. In the early days of the bureau's existence the field covered was not very broad and it was possible for the director to draw necessary regulations and detailed specifications as to what was required, and the sanitary officer worked quite successfully. With the broadened activities needed throughout the state, this is no longer entirely practicable.

#### Legislation

The bureau has had considerable difficulty in prosecution of cases for violation of sanitary regulations, and in numerous cases prosecuting officers advise that they cannot make out a case for us under present statutes and regulations. Various boards and commissions have been set up with power to make sanitary regulations which should be the responsibility of the State Board of Health. Under the present statutes, county health units have no clearly defined authority to enforce sanitary regulations. The present regulations of the Board of Health are in many cases, antiquated and do not cover important fields. All of this causes confusion.

It is most necessary that efforts be made to get the next legislature to amend the statutes so that the State Board of Health may (1) pass comprehensive regulations under a recognized sanitary code, (2) that this sanitary code be superior to and supersede such regulations passed by other state and local agencies; and (3) that power be given local health officers to enforce the State Board of Health's Sanitary Code.

M A L A R I A   R E S E A R C H

Mark F. Boyd, M. D., Director\*

A. Completed Studies and Reviews:

In the year under review, manuscripts with the following titles have been submitted to the home office. A discussion of their contents is superfluous.

63) S. F. Kitchen. "Some Aspects of Immunity in Human Malaria". This review was prepared for presentation at the meeting of the Florida Anti-Mosquito Association held at Jacksonville, Florida, on March 28 and 29, 1938, and appeared in the mimeographed proceedings of the meeting.

64) Mark F. Boyd. "The Threshold of Parasite Density in Relation to Clinical Activity in Primary Infections with P. vivax."

65) Mark F. Boyd and S. F. Kitchen. "Vernal Vivax Activity in Persons Simultaneously Inoculated with P. vivax and P. falciparum".

66) Mark F. Boyd and S. F. Kitchen. "Demonstrable Maturity of Gametocytes as a Factor in the Infection of Anophelines with P. vivax and P. falciparum".

67) Mark F. Boyd and S. F. Kitchen. "An Instance of Protracted Latent Incubation Period in a Patient Infected with a North American Strain of P. vivax".

\*From the Division of Malaria Research, Rockefeller Foundation International Health Division, Tallahassee, cooperating with the Florida State Board of Health.

68) Mark F. Boyd and S. F. Kitchen. "The Clinical Reaction in Vivax Malaria as Influenced by the Consecutive Employment of Infectious Mosquitoes".

69) Mark F. Boyd and S. F. Kitchen. "The Demonstration of Sporozoites in Human Tissues".

70) S. F. Kitchen, E. L. Webb and W. H. Kupper. "The Influence of Malarial Infections on the Wassermann and Kahn Reactions".

71) Mark F. Boyd, W. H. Kupper and Choice B. Matthews. "A Deficient Homologous Immunity Following Simultaneous Inoculation with two Strains of P. vivax".

72) Mark F. Boyd and L. T. Coggeshall. "A Resume of Studies on the Host-Parasite Relation". Presented at the 3rd International Joint Congress of Tropical Medicine and Malaria, Amsterdam, September, 28, 1938.

73) Mark F. Boyd, S. F. Kitchen and Choice B. Matthews. "Consecutive Inoculations with Plasmodium vivax and Plasmodium falciparum".

74) Mark F. Boyd and Choice B. Matthews. "Further Observations on the Duration of Immunity to the Homologous Strain of Plasmodium vivax".

75) S. F. Kitchen. "The Infection of Mature and Immature Erythrocytes by the Plasmodium falciparum and Plasmodium malariae".

76) S. F. Kitchen. "The Differential Infection of Mature and Immature Erythrocytes by the Plasmodia of Human Malaria". Presented at Oklahoma City, November 17, 1938 at the joint session of the American Society of Tropical Medicine and the National Malaria Committee.

77) S. F. Kitchen. "Non-Specific Serologic Reactions in Malaria Infections". Presented at the Hollywood meeting of the Florida Public

Health Association, November 29, 1938.

78) Mark F. Boyd. "Malaria: Retrospect and Prospect". Presidential Address, delivered before the American Society of Tropical Medicine, at the Oklahoma City meeting, November 17, 1938.

79) Mark F. Boyd and Choice B. Matthews. "An Observation on the Incubation Period of Plasmodium falciparum".

#### B. Work in Progress:

##### 1. Attempted hybridization of vivax strains.

Since from a theoretical standpoint it is conceivable that some epidemics of malaria may be attributable to the origin of new strains of parasites, and that such strains may most likely arise through hybridization, it appeared desirable to experimentally attempt hybridization. Since strain differentiation is at present effected immunologically, the demonstration of successful hybridization will depend upon the production of a strain apparently immunologically different from its progenitors.

We are proceeding along the following lines. As a prerequisite there is required two strains which have been demonstrated to be immunologically distinct, in this case our McCoy and Cuban strains. The following steps are planned:

- a) Simultaneously inoculate susceptible subject (A) intravenously with huge and approximately equal doses of trophozoites of both strains.
- b) When the subject is infectious (assuming gametocytes of both strains are present) apply anopheline mosquitoes.
- c) In mosquitoes hybridization may take place. Possibly present

on maturation sporozoites of each original strain plus hybrid sporozoites.

d) Re-inoculate subject (A) with these mosquitoes. If a clinical attack results it might possibly be attributable to a hybrid, rather than either of the original strains.

e) Again infect mosquitoes on subject (A) thus possibly effecting a purification of a hybrid from progenitors.

f) Inoculate several subjects with the mosquitoes infected in (e) (B) (C) (D):

g) Before attacks in (B) (C) or (D) are terminated, sub-inoculate one or two (E) (F) further susceptibles by intravenous introduction of trophozoites from (B) (C) or (D).

h) On completion of attacks in (B) (C) and (D) re-inoculate them intravenously with trophozoites from (E) or (F) with the following controls:

1. Blood from (E) or (F) into 1st (B) and also 2nd into a new susceptible, 3rd a McCoy convalescent and 4th a Cuban convalescent.
2. Blood from an active McCoy case into 1st a susceptible, 2nd a McCoy convalescent, and 3rd into (C).
3. Blood from an active Cuban case into 1st a susceptible, 2nd a Cuban convalescent and 3rd into (D).

If hybridization with an immunologically distinct hybrid has been infected, all except (B) in the first series, all except the McCoy convalescent in the second series, and all except the Cuban convalescent in the third series, should experience clinical attacks.



Although we have made several attempts to execute this procedure, only two have been sufficiently well performed to warrant discussion. The parenthesized letters refer to the steps in the preceding outline.

Experiment 103: (a) The original subject B868 was intravenously inoculated on July 23, 1937 by 13.5 million trophozoites each of the McCoy and Cuban strains of *P. vivax*, from which a clinical attack of 58 days duration was experienced. (b) Anophelines of lot 651 were infected from this patient. These mosquitoes were used to infect (d) patient 296 (a variation), who experienced a 27 day attack, (e) during which mosquitoes of lot 686 were infected. These were used (d) to re-inoculate patient 296 on November 16, 1937. Thirty-one days later this subject experienced a sub-clinical rise in parasite density, again on February 28, 1938 and again on May 14, 1938, but never attaining proportions that suggested satisfactory infection of mosquitoes. On the last occasion patient B890 was inoculated intravenously with the blood of 296, and experienced a ten-day clinical attack. (h1) On May 27, 1938, blood from B890 was inoculated into 296 (B895), a susceptible B893, a Cuban convalescent B870 (297) and a McCoy convalescent B887 (292). Subsequently 296 presented a sub-clinical rise in parasite density which lasted 10 days; B893 experienced a 16 day clinical attack; B870 a sub-clinical parasite rise lasting 10 days and B887 was parasitologically and clinically negative. (h2) On June 10, 1938 blood from an active McCoy case 324, was inoculated into B890, into a McCoy convalescent B887 (292) and into a susceptible B896.

Subsequently B890 remained parasitologically and clinically negative, as did B887, while B898 experienced a 9 day clinical attack. (h 3) On June 28, 1938, blood from an active Cuban case was inoculated into B890, into a Cuban convalescent B899 (315) and into a susceptible B900 (1178). Subsequently B890 experienced a sub-clinical rise in parasite density which lasted for 13 days, B899 remained parasitologically and clinically negative, while B900 experienced an 8 day attack.

Interpretation: We are obviously limited to a judgment on the nature of the parasites present in patient 296 (B895) in May, with which patient B890 was inoculated. In (h 1) the McCoy convalescent B887 was completely refractory, the susceptible B893 was completely susceptible. The test case 296 (B895) and the Cuban convalescent case B870 behaved in an identical manner, exhibiting an incomplete immunity. In (h 2) the test case B890 and the McCoy convalescent B887 were completely refractory, while the control B898 was completely susceptible. In (h 3) the susceptible control B900 was completely susceptible, the Cuban convalescent B899 refractory and the test case partially immune.

The results show complete immunization against the McCoy strain and partial against the Cuban. We are not justified however, in inferring that the May recurrence in patient 296 suggests that hybridization was effected in either of mosquito lots 651 or 686.

Experiment 106: This was executed in strict accordance with the essentials of the protocol.

a) On April 12, 1938, the original subject B886 was intravenously

inoculated by 30 million trophozoites of each of the Cuban and McCoy strains, and experienced a 45 day attack. Mosquitoes (b) of lot 734 were infected on the patient, and on May 18 she was (d) re-inoculated (B886-328) by them and subsequently experienced a 7 day attack with one 5 day recurrence. Lot 742 (e) was then infected on B886-328 and used to infect patients 333 and 334 (f). These experienced 11 and 41 day clinical attacks. Confirmatory sub-inoculations to test the nature of the parasites in 333 and 334 were performed as follows:

h1) On August 15, 1938 blood from case 334 was inoculated into a susceptible B910, and the day following into his co-partner and test case 333 B911, into a Cuban convalescent 315 B899 and into a McCoy convalescent 335 B913. The susceptible experienced a 29 day attack, the McCoy convalescent a 7 day attack, while the Cuban convalescent and the test case both experienced a brief sub-clinical rise in parasite density.

Interpretation: The patients 333 and 334 inoculated with mosquitoes infected on case 238 B886 after her re-inoculation by lot 734 in which the possibility of hybridization is considered, are completely susceptible to the McCoy strain, and show a partial immunity to the Cuban strain. No data suggesting hybridization were secured.

It would appear that this method of approach will not afford a solution to the problem. Other methods are under consideration.

## 2) Specific Cross Immunity.

The results of this study were reported in paper 73.

## 3) Mexican Parasites and Anophelines.

We are collaborating with Doctor W. C. Earle in a study of the comparative susceptibility of a Mexican race of A. pseudopunctipennis and A. quadrimaculatus to Mexican and North American strains of P. vivax and P. falciparum.

A strain of Mexican P. falciparum has been successfully introduced but as yet our attempts to introduce P. vivax have failed. There has been no difficulty in rearing A. pseudopunctipennis from ova shipped from Mexico by air express.

The available results may be briefly summarized as follows:

Parasite	Strain	<u>A. pseudopunctipennis</u>		<u>A. quadrimaculatus</u>	
		Exam.	Pc. pos.	Exam.	Pc. pos.
<u>P. falciparum</u>	Mexican	24	4.1	42	78.6
"	Long	28	7.1	44	43.2
<u>P. vivax</u>	McCoy	30	10.	49	75.6

It is interesting to note that the Mexican pseudopunctipennis appears to be but slightly susceptible to either the Mexican or Floridian strain of P. falciparum, while the quadrimaculatus appears more susceptible to the Mexican falciparum.

In this connection it is interesting to note that cross inoculations of persons who have recovered from an attack produced by one strain, with the other strain, show unusual results, viz:

Re-inoculated by:	Results of re-inoculation in convalescents from:	
	Mexican	Long
Mexican	-	Take
Long	Failure	-

We had expected that both strains would be reciprocally heterologous, and were surprised to find that the Mexican strain protect-



ed against re-inoculation with the Long strain. We have had two results in agreement and shall test them again.

4) Erythrocyte preferences on the part of P. malariae and P. falciparum.

Dr. Kitchen's projected studies have been completed, the results being presented in papers 75 and 76.

5) The cholesterol content of the serum of malarial patients.

Dr. Choice Matthews reports as follows on this study:

Since the demonstration of a high percentage of blood samples giving positive serological readings for syphilis in specimens taken serially from a patient in an attack of malaria, a study was made of the serum cholesterol of four malarial patients in an attempt to determine if there was any relationship between these values and simultaneous serological tests. The data indicate no evident relationship between the two values.

There was some evidence to indicate that serum cholesterol values might be directly related to hemoglobin values and this point was investigated as a point of interest. While no direct relationship could be established there was only one case in which a serum cholesterol reading within the normal range was found among samples with lowered hemoglobin values.

6) Agents for the re-activation of latent malarial infections:

Dr. Choice Matthews reports as follows on this study:

The following is a list of drugs investigated as possible re-activators of latent malaria, and which have been discarded as being

- |                         |                               |
|-------------------------|-------------------------------|
| 1. Ergot, fluid extract | 7. Paraldehyde                |
| 2. Ephedrine, Sulphate  | 8. Glucose 50% (intravenous)  |
| 3. Fituritin, sulphate  | 9. Typhoid vaccine            |
| 4. Strychnine, sulphate | 10. Epinephrine Hydrochloride |
| 5. Aminophyllin         | 11. Amyl Nitrite              |
| 6. Neoarsphenamine      | 12. Nitroglycerine            |

The two substances that are being investigated further are liver extract, administered intravenously, and old tuberculin, administered subcutaneously.

Results with liver extract seem better if it is used within two weeks immediately following the cessation of clinical malaria. It is an interesting note that all cases in which it has been successfully used were cases with splenomegaly.

The use of old tuberculin is the most promising of all to date. Two cases of two and one-half and three months quiescence respectively after cessation of clinical activity have given positive blood smears following the injection, and the former of these suffered a short clinical relapse. In no case has the injection provoked appearance of parasites in the blood when a period of six months or more has elapsed since the cessation of the clinical attack.

In patients whose clinical course has stopped but in whose blood parasites are still demonstrable, an injection of tuberculin invariably causes a definite if temporary rise in parasite density. There have been two instances in which the increase was great enough to cause a brief clinical relapse.

7) Demonstration of humoral immunity in human subjects.

The importance of the demonstration by Dr. L. T. Coggeshal

of the existence of humoral immunity in rhesus monkeys recovering from an attack produced by *P. knowlesi* indicates the desirability of confirming and extending these observations in human subjects. We are also attempting the hyper-immunization of patients to the point where they are capable of immediately removing any reasonable quantity of parasites introduced.

One experiment performed to date appears to demonstrate the existence of protective anti-bodies in a fully immune subject. Serum from patient 34, who after the series of re-inoculations described in paper 74, was found to be fully immune, was utilized. Parasitized blood was secured from an active McCoy case B819, and defibrinated. Three 10 cc. portions were measured. The first was left alone. The others were centrifuged and the serum removed. In the 2nd portion the volume was made up to 20 cc. with normal serum (i. e. from an individual who had never had malaria), and the third portion was made up to 20 cc. with the serum of patient 34. All three were then placed in a 37°C incubator for 8 hours, when 1 cc. portion of each were separately cultured in nutrient broth. At the end of 24 hours further incubation, the cultures being negative, each sample was intravenously inoculated into a separate patient. The patient receiving the incubated mixture of normal serum and parasitized blood developed an active clinical attack after 13 days incubation. The patient receiving the incubated whole blood from the donor of the parasites remained parasitologically and clinically negative. The patient receiving the incubated mixture of parasitized blood and immune serum became blood positive after an incubation

period of 11 days. Parasites were observed on only one day, and no clinical reaction was experienced.

Sufficient parasites survived the incubation of a mixture of parasites and normal serum to infect a susceptible patient. On the other hand very few appear to have survived when mixed with the serum of an immune convalescent, and none when incubated with their own homologous serum. This suggests that as early as six days after a clinical onset, a patient's blood already possesses significant parasitocidal properties.

#### C. Malaria Therapy.

Although in the previous report the early discontinuation of the McCoy strain of *P. vivax* in routine therapy was forecast, it has been possible to continue its employment during the year, in which period it has been carried through passages 38 to 43 inclusive. The Cuban strain has been used to some extent.

The Jones strain of *P. malariae* has been carried on through five blood passages.

The Long strain of *P. falciparum* has been carried on through passages 13 to 18 inclusive.

A list of the inoculations performed at the Florida State Hospital during the year (to December 1, 1938) will be found on the next page. A total of eleven referred patients have been inoculated during the year.

#### D. Insectaries:

The insectaries have been maintained in satisfactory condition,

Inoculations made in the Malaria Therapy Service,  
Florida State Hospital. (1938, to December 1)

		P. vivax		Both P. vivax and		P. fal-		P. malariae	
		alone		P. falciparum		ciparum			
Sporozoite inoculation.		Take	Fail.	Both	One only	Fail	Take	Fail.	Take
Sporozoite inoculation.	Primary	27	9	2	2		3	4	
	Re-inoc. (a)								
	Prev.								
	unsucc.	6					1		
	Re-inoc. (b)								
	Prev.								
Trophozoite inoculation	take	10	1						
	Primary	18	8				10	8	9
	Re-inoc (a)								
	Prev.								
	unsucc.	1							
	Re-inoc (b)								
	Prev.								
	Take	22	8				3		

and the colonies of *A. quadrimaculatus* and *A. punctipennis* continue to thrive. Extensive repairs to both insectaries were made involving replacement of the sills of both buildings which had rotted.

On request quadrimaculatus ova have been furnished to the Army Medical School and the malaria laboratory of the U. S. Public Health Service at Columbia, South Carolina, as well as to the I. H. D. laboratory at the Rockefeller Institute, New York City.

Three shipments of ova of *A. pseudopunctipennis* have been received by air express from Doctor Earle at Cuernavaca, Mexico, from each of which a considerable number of adults were reared.

#### E. Field Work.

No field work directly under the auspices of the station has been conducted during this period.

#### F. Instruction given:

During the year the following persons have spent one or more weeks at the station for the purpose of receiving instructions in malariology:

Dr. Bulmer, Medical Department, Standard Oil Company  
Mr. J. A. Mulrennan, Florida State Board of Health  
Dr. J. A. Montoya, Colombia South America  
Miss Ruth Smyth, Technician, Tennessee State Health Department  
Dr. Silvestro Lopez Portillo, IHD fellow, Mexico  
Mr. Thomas H. Weller, Medical Student, Harvard Medical School  
Mr. George Palmer, Medical Student, JHU School of Medicine  
Mr. Charles Renn, IHD fellow, Harvard University  
Dr. Athanasios G. Mandekos, IHD fellow, Athens Greece  
Miss Vilda Shuman, Medical Student, Vanderbilt Medical School  
Dr. Bert Malone, Malariologist, Georgia State Department of Health

The station cooperated with the department of biology of the Florida State College for Women by giving the students taking the course in parasitology in that department laboratory instruction in malaria for eight, two-hour periods.

#### We have had the following visitors:

Dr. S. W. Bohls, Director of Laboratories, Texas Department of Health  
Mr. C. F. Catlett, Chief Engineer, Florida State Board of Health  
Mr. Russell Broughman, Engineer, Florida State Board of Health  
Professor Creighton, Department Entomology, University of Florida  
Professor Hixson, Department of Entomology, University of Florida  
Dr. Schoenleber, Medical Director, Standard Oil Company.  
Mr. L. M. Clarkson, Georgia State Department of Health  
Professor Creighton and class of 25 students in entomology from the University of Florida  
Dr. Harrison, Bradenton, Florida  
Professor Juan B. Kouei, University of Habana  
Mr. Norman Taylor, Cinchona Institute, New York City  
Professor White of Florida State College for Women and class of 15 in hygiene  
Dr. W. A. McPhaul, State Health Officer of Florida  
Dr. Patterson, Director of Laboratories, Florida State Board of Health



Dr. A. J. Logie, Director Division of Tuberculosis, Florida State Board of Health  
 Mr. Bernard V. Travis, U. S. Bureau of Entomology  
 Dr. M. A. Barber, IHD  
 Dr. H. P. Carr, IHD  
 Dr. Justin Andrews, Director, Division of Malaria Investigations Georgia State Department of Health  
 Dr. Bert Malone, Assistant Malariologist, Georgia State Department of Health  
 Mr. John Henderson, Engineer, Georgia State Department of Health  
 Dr. Fruma Wolfson, Department of Protozoology, JHU School of Hygiene

G. Travel, Consultation and Speaking:

On January 14 a trip was made to Jacksonville to confer with Dr. McPhaul

From January 18 to 21, a trip was made to Birmingham, Alabama, and Pensacola, Florida. At the former place a conference was held with Dr. E. H. Hinman, Secretary of the American Society of Tropical Medicine and Mr. C. P. Loranz of the Southern Medical Association. At the latter place an inspection of the program of the malaria control project was made.

On February 7 and 8 went to Savannah, Georgia, to be present as IHD representative at the dedication of the Henry Rose Carter Memorial Laboratory of the U. S. Public Health Service.

From February 21 to April 19 was absent on a long tour through Mexico and Central America. In Mexico conferred with Dr. Ferrell and Dr. Earle re malaria program. In Panama conferred with Dr. Crawford and spent three weeks in Costa Rica assisting Dr. Kumm in the advancement of his program. On return via Havana gave four lectures on malaria in Spanish at the Finlay Institute.

A visit was paid to Pensacola from April 27 to 29, to inspect the progress made in the control program at that place.

In order to attend a meeting of the Board of Malaria Consultants of the Tennessee Valley Authority, a trip was made to Memphis, Tennessee, and Decatur, Alabama, lasting from June 25 to July 3. On the return on the 3rd, a brief visit was paid the Pensacola project.

On invitation attended meeting of a committee of the council of the American Association for the Advancement of Science, Washington, D. C., being absent from the 6th to the 10th of July.

A brief visit was paid to the Pensacola project on August 15, in company with Mr. Catlett and Mr. Peters.

August 30 to October 11, absent on European trip. The period from September 11 to 25 was personal leave. From the 26th to 28th of September was in Amsterdam, Holland, in attendance at the 3rd Joint International Congress of Tropical Medicine and Malaria. Presented a paper jointly with Dr. L. T. Coggeshall. Dr. Mark F. Boyd was a member of the official U. S. delegation to the Congress, and also represented the American Association for the Advancement of Science, and American Society of Tropical Medicine (A. S. T. M.).

October 26-28, paid a brief visit to Pensacola.

Drs. Boyd and Kitchen absent from Nov. 12 to 20, in attendance at the annual meetings of the National Malaria Committee and the American Society of Tropical Medicine. Dr. Kitchen contributed to the program of the joint meeting of these bodies (See paper 76). Dr. Boyd

as current president of the A. S. T. M., gave a presidential address (See paper 78).

On December 1, lectured on malaria to the class in the Army Medical School, Washington, D. C.

November 30 left on a long trip to South and Central America, not expecting to return before end of February, 1939, at the earliest. Conferences are to be held with health officials in British Guiana and Venezuela before the end of the year.

The following further public addresses have been given:

January 17. Spoke on malaria before a meeting of the Leon County Health Council.

Dr. S. F. Kitchen attended the meeting of the Florida Anti-mosquito Association at Jacksonville, March 28 and 29, and contributed to the program.

April 21. Spoke on the Wassermann reaction in malaria before the Second District Medical Society.

May 13. Spoke on the general subject of Research before the Tallahassee section of the Florida Academy of Science.

June 6. Spoke on syphilis before the Chattahoochee Rotary Club.

August 18. Spoke before the Second District Medical Society.

Dr. S. F. Kitchen represented the station at the Hollywood meeting of the Florida Public Health Association held from November 28 to 30. His contribution to the program (No. 77) is noted.

#### H. Staff:

Dr. W. H. Kupper resigned as physician on the staff of the Florida State Hospital assigned to the malaria therapy service on December 7, 1937. The position was filled by the appointment of Dr. Choice B. Matthews, on our nomination, effective January 1, 1938.

Other than noted there have been no changes in the personnel of the station during the period. Miss Grace Moore, technician on duty at the Florida State Hospital, has tendered her resignation effective December 31, 1938. Miss Myrtle Hobbs, who has been in training without pay since November 16, will succeed her.

# ACCOUNTING

G. Wilson Baltzell, Auditor

The funds listed below passed through the State Board of Health during the period beginning July 1, 1937 and ending June 30, 1938, which is the fiscal year of the State of Florida and the Federal Government.

In addition to these funds, the Legislature appropriated \$18,000.00 for a new addition to the building which added to \$17,670.33, which had accumulated from Centralization of Marriage and Divorce Funds, made a total of \$35,670.33 which the State spent on the new building to match W. P. A. Funds.

The figures below are merely the totals for the various activities. A detailed financial report is compiled each year, giving the analysis for every department and division.

	Receipts including balances from last fiscal year	Disbursements	Balance June 30, 1938
State Board of Health legislative appropriation	225,000.00	223,209.61	1,790.39
U. S. Public Health Service - Title VI	151,340.29	143,597.01	7,743.28
Maternal and Child Health Funds	112,277.94	81,883.61	30,394.33
<b>SPECIAL FEES</b>			
Centralization of Marriage & Divorce Records	30,784.45	30,784.45	
Registration of Doctors and Midwives	6,556.61	3,102.99	3,453.62
Certified Copies of Birth and Death Certificates	9,446.00	4,465.01	4,980.99
Drug Store Inspection	9,214.43	8,766.94	447.49
County Health Units, City and County Funds	101,097.33	101,694.58	- 597.25
Rockefeller Foundation			
Division of Malaria Research	12,227.03	12,227.03	
Rockefeller Foundation			
Special Study of Hookworm Disease	4,346.89	4,346.89	
Rockefeller Foundation			
Malaria Control Studies Escambia County	4,000.00	4,000.00	
	<u>666,290.97</u>	<u>618,078.12</u>	<u>48,212.85</u>

This being the second year of the Biennium, the unexpended balance in the Legislative Appropriation is carried over and added to the annual appropriation for next fiscal year. The Federal balances as of June 30, 1938, may appear large, but this was caused by certain activities, fostered by the U. S. Public Health Service and Children's Bureau, not getting into full swing until the last part of the fiscal year, but whatever balances are left over are added to the annual allotments for the next fiscal year, with resulting benefits for that year.



## HEALTH EDUCATION

Elizabeth Bohnenberger, Director

During 1938 the Division of Health Education attempted to assist all bureaus of the State Board of Health with their educational programs, and to coordinate them.

The division served as a clearing house for health information to the public. Pamphlets, motion picture films, and talks by the State Board of Health personnel were used as media of health education. The division has a fairly large collection of health films which have been shown in all parts of the state. These have been scheduled in those counties having full-time health units to assist the unit in carrying forward its educational program. In counties where there is no health unit the films have been used by women's clubs, parent-teacher associations and other civic clubs, and in every case have been part of a program to promote the establishment of full-time health service.

Physicians and nurses of the State Board of Health have cooperated in filling requests for speakers at numerous meetings. The division has assisted the speakers with health education material and planned programs.

The publicity assistant prepared releases of health information to the newspapers of the state. In addition news articles on the work of the State Board of Health personnel were frequently published. The publicity assistant personally contacted all newspaper offices in the rural sections of the state and secured the active cooperation of many editors in the publicity program.

In December, following the resignation of the publicity assistant, a public relations consultant was added to the Division of Health Education. News releases on a wider scale than had ever before been attempted were sent to all newspapers and widely published. A planned program of publicity is

already showing results in public interest in the work of the State Board of Health and in requests for health information.

In January the Library of the State Board of Health was made a part of the Division of Health Education. The Library has been in existence since 1932 and has become a real force for health education throughout the state. Library service is given to all private physicians and nurses in the state. The personnel of the State Board of Health and of the county health units use the Library also.

Books, reprints and periodicals are sent by mail to all persons in the medical, nursing and public health professions. Reference service, consisting of searches of medical literature, preparation of bibliographies, editing of papers, is also given. There is no charge for this service except postage costs. It is planned to assist all full-time county health units in the establishment and maintenance of basic libraries for the use of the health unit staff.

It was also made a part of the health education program to encourage the use of health material in the schools by supplying school libraries with free pamphlet material. Requests from teachers for suggestions on health teaching material have been numerous and attempts to fill this gap have been made in so far as possible. The division is looking forward to the beginning of a coordinated health education program in all Florida elementary schools and conferences with school officials have been held to this end.

Radio addresses by State Board of Health personnel have been made at various times throughout the year. The need for a planned radio program is urgent and the use of the dialogue or play form rather than the one-man talk is indicated.

The Division of Health Education has attempted to cooperate with all voluntary health organizations in the state. Interchange of speakers at annual programs and frequent conferences with the leaders of these organizations have been held through the year. It is felt that there is a mutual understanding of aims and programs here.

FLORIDA HEALTH NOTES, the monthly bulletin of the State Board of Health is edited in this division. A change of policy in the content of the bulletin was made in 1938 and instead of publishing a number of short articles on various subjects,

each issue was devoted to one subject. In this way it was felt that a better understanding of the health problems on the part of the public would result. The mailing list for HEALTH NOTES increased greatly in 1938 and it is intended to give the bulletin a continued wider distribution.

As a separate division, health education is new in the State Board of Health. The program is not in any case as widespread as it should be. Particularly should the full-time county health units be given more aid in developing an educational program for their communities. Staff education programs planned in cooperation with each bureau and with the county health units are needed and are planned for the future.

## APPENDIX

TABLE IA

## REPORTED CASES OF NOTIFIABLE DISEASES IN THE STATE OF FLORIDA

	STATE 1936	STATE 1937	STATE 1938	COUNTIES 1938	ALACHUA	BAKER	BAY	BRADFORD	BREVARD	BROWARD	CALHOUN
TYPHOID	93	133	156	3	1	0	1	0	6	0	0
PARATYPHOID	4	15	11	0	0	0	0	0	0	0	0
TYPHUS	55	116	132	0	0	0	0	0	1	0	0
MALARIA	869	948	459	3	0	1	0	0	34	0	0
SMALLPOX	0	7	15	0	0	0	0	0	0	0	0
MEASLES	307	612	8593	0	1	2	4	0	282	0	0
SCARLET FEVER	299	386	356	2	0	1	0	4	2	0	0
WHOOPING COUGH	383	520	860	0	0	1	0	0	40	0	0
DIPHTHERIA	309	621	493	2	0	1	2	2	11	0	0
INFLUENZA	587	490	112	0	0	0	0	0	8	0	0
MUMPS	1084	661	632	0	0	0	0	0	0	0	0
DYSENTERY	31	46	67	0	0	1	0	1	0	0	0
LEPROSY	0	2	1	0	0	0	0	0	0	0	0
POLIOMYELITIS	42	28	32	0	0	0	0	0	6	0	0
LETH. ENCEPHALITIS	0	8	7	0	0	0	0	0	0	0	0
MENINGITIS	120	163	59	1	0	0	0	0	0	0	0
CHICKENPOX	750	728	1407	2	0	0	0	0	43	0	0
GERMAN MEASLES	0	39	8	0	0	0	0	0	0	0	0
DENGUE	12	6	13	0	0	0	0	9	0	0	0
TETANUS	31	12	26	0	0	0	0	0	0	0	0
RABIES (HUMAN)	1	5	3	0	0	0	0	0	0	0	0
TUBERCULOSIS	627	1156	1039	9	0	2	0	3	16	1	1
SYPHILIS	3287	14433	17455	597	12	189	18	73	448	62	62
CHANCROID	96	95	33	0	0	0	0	0	0	0	0
GONOCOCCUS	1146	2350	1916	11	1	8	3	7	1	2	2
OPHTH. NEONATORUM	3	6	14	0	0	0	1	0	0	0	0
CANCER	240	215	182	0	0	1	0	0	0	0	0
PELLAGRA	35	41	187	0	0	0	1	0	0	0	0
TULAREMIA	0	2	4	0	0	0	0	0	0	0	0
TRACHOMA	54	7	16	0	0	0	0	0	0	0	0
PNEUMONIA	634	454	836	3	3	0	2	0	0	0	0
HOOKWORM	2211	8326	3515	74	15	30	35	6	8	11	11
TRICHINOSIS	12	7	1	0	0	0	0	0	0	0	0
UNDULANT	16	20	39	0	0	1	0	0	0	0	0



TABLE IA (continued)

## REPORTED CASES OF NOTIFIABLE DISEASES IN THE STATE OF FLORIDA

	CHARLOTTE	CITRUS	CLAY	COLLIER	COLUMBIA	DADE	DESOTO	DIXIE	DUVAL	ESCAMBIA
TYPHOID	0	3	0	0	0	19	0	0	49	21
PARATYPHOID	0	0	0	0	0	4	0	0	2	3
TYPHUS	0	0	0	0	6	13	0	0	35	13
MALARIA	0	7	0	0	4	16	4	0	48	94
SMALLPOX	0	2	0	0	0	0	0	2	0	2
MEASLES	0	8	0	0	6	1689	2	0	3564	93
SCARLET FEVER	1	0	0	0	1	28	1	0	75	29
WHOOPING COUGH	0	1	0	0	0	172	0	0	188	111
DIPHTHERIA	0	0	0	0	3	24	1	0	105	52
INFLUENZA	0	0	0	0	0	31	0	0	19	6
MUMPS	0	0	1	0	0	15	0	0	302	112
DYSENTERY	1	0	0	0	0	14	1	0	30	2
LEPROSY	0	0	0	0	0	0	0	0	0	0
POLIO MYELITIS	0	0	0	0	0	1	0	0	3	2
LETH. ENCEPHALITIS	0	0	0	0	0	3	0	0	1	1
MENINGITIS	0	0	0	0	0	15	3	0	24	0
CHICKENPOX	0	0	1	0	0	82	0	0	691	54
GERMAN MEASLES	0	0	0	0	0	0	0	0	3	0
DENGUE	0	0	0	0	0	0	0	0	3	0
TETANUS	0	0	0	0	0	17	0	0	6	0
RABIES (HUMAN)	0	0	0	0	0	0	0	0	1	0
TUBERCULOSIS	0	0	0	0	34	165	0	0	213	150
SYPHILIS	9	30	6	4	252	1020	73	55	3930	676
CHANCROID	0	0	0	0	0	20	0	0	1	1
GONOCOCCUS	1	6	0	0	14	165	3	0	683	217
OPHTH. NEONATORUM	0	0	0	0	0	5	0	0	4	1
CANCER	1	0	0	0	4	136	0	0	1	14
PELLAGRA	0	0	0	0	11	4	0	0	3	94
TULAREMIA	0	0	0	0	0	1	0	0	0	0
TRACHOMA	0	0	1	0	0	5	0	0	0	0
PNEUMONIA	0	0	0	0	25	189	0	0	119	29
HOOKWORM	9	32	21	1	81	35	39	21	479	447
TRICHINOSIS	0	0	0	0	0	0	0	0	0	0
UNDULANT	0	0	0	0	0	10	0	0	5	3

TABLE JA (continued)

## REPORTED CASES OF NOTIFIABLE DISEASES IN THE STATE OF FLORIDA

	FLAGLER	FRANKLIN	GADSDEN	GILCHRIST	GLADES	GULF	HAMILTON	HARDEE	HENDRY	HERNANDO
TYPHOID	0	1	3	0	0	0	0	0	0	0
PARATYPHOID	0	0	0	0	0	0	0	0	0	0
TYPHUS	0	0	7	1	0	0	0	0	2	0
MALARIA	0	11	39	0	0	21	0	45	0	0
SMALLPOX	0	0	0	0	0	0	0	0	0	0
MEASLES	0	0	1	0	0	5	3	2	0	0
SCARLET FEVER	0	0	2	0	0	0	2	0	0	0
WHOOPING COUGH	0	10	57	0	1	16	0	0	0	3
DIPHTHERIA	0	0	1	0	3	3	0	2	0	0
INFLUENZA	0	0	0	0	0	0	0	0	0	0
MUMPS	0	1	26	0	0	0	0	0	0	2
DYSENTERY	0	4	0	0	0	2	0	1	0	0
LEPROSY	0	0	0	0	0	0	0	0	0	0
POLIO MYELITIS	0	0	2	0	0	1	0	0	0	0
LETH. ENCEPHALITIS	0	0	0	0	0	0	0	0	0	0
MENINGITIS	0	0	0	0	0	0	2	0	0	1
CHICKENPOX	0	0	37	0	0	0	0	0	0	0
GERMAN MEASLES	0	0	0	0	0	0	0	0	0	0
DENGUE	0	0	0	0	0	0	0	0	0	0
TETANUS	0	0	1	0	0	0	0	0	0	0
RABIES (HUMAN)	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	7	0	18	1	1	3	2	0	0	0
SYPHILIS	3	223	363	8	9	191	80	26	16	18
CHANCROID	0	2	2	0	0	1	0	0	0	0
GONOCOCCUS	0	5	14	3	1	37	17	7	0	0
OPHTH. NEONATORUM	0	0	0	0	0	0	0	0	0	0
CANCER	0	0	0	0	0	1	0	2	0	0
PELLAGRA	0	4	37	0	0	10	1	0	0	0
TULAREMIA	0	0	1	0	0	0	0	0	0	0
TRACHOMA	0	0	0	0	0	0	0	0	0	0
PNEUMONIA	0	2	14	0	0	4	0	0	0	0
HOOKWORM	0	176	256	1	60	16	46	19	3	9
TRICHINOSIS	0	0	0	0	0	0	0	0	0	0
UNDULANT	0	0	2	0	0	0	0	0	0	0

TABLE IA (continued)

## REPORTED CASES OF NOTIFIABLE DISEASES IN THE STATE OF FLORIDA

	HIGHLANDS	HILLSBORO	HOLMES	INDIAN RIVER	JACKSON	JEFFERSON	LAFAYETTE	LAKE	LEE	LEON
TYPHOID	0	12	0	0	4	0	0	3	0	0
PARATYPHOID	0	0	0	0	0	0	0	1	0	1
TYPHUS	1	10	0	0	7	0	0	0	3	7
Malaria	4	12	4	0	7	0	0	38	1	5
SMALLPOX	0	1	0	0	1	0	0	0	0	0
MEASLES	31	500	0	1	29	0	0	6	1	6
SCARLET FEVER	0	80	0	0	1	0	0	16	2	10
WHOOPING COUGH	5	68	0	0	6	0	0	0	1	10
DIPHTHERIA	4	128	0	0	0	0	0	1	2	4
INFLUENZA	0	26	0	0	0	0	0	0	5	0
MUMPS	1	49	0	0	0	1	0	0	0	4
DYSENTERY	0	1	0	0	1	0	0	0	0	0
LEPROSY	0	0	0	1	0	0	0	0	0	0
POLIOMYELITIS	0	4	2	0	4	0	0	0	0	0
LETH. ENCEPHALITIS	1	0	0	0	0	0	0	0	0	0
MENINGITIS	0	2	0	0	0	0	0	0	0	1
CHICKENPOX	6	89	2	0	0	0	0	4	4	17
GERMAN MEASLES	0	5	0	0	0	0	0	0	0	0
DENGUE	0	0	0	0	0	0	0	0	0	0
TETANUS	0	1	0	0	0	0	0	0	0	0
RABIES (Human)	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	7	190	0	0	1	1	0	11	6	11
SYPHILIS	114	1728	32	55	48	27	0	508	116	379
CHANCROID	0	0	0	0	0	0	0	0	0	0
GONOCOCCUS	10	317	1	3	19	0	3	9	21	2
OPHTH. NEONATORUM	0	1	0	0	0	0	0	0	0	0
CANCER	0	1	0	0	0	0	0	0	2	0
PELLAGRA	1	8	0	0	1	0	0	0	0	2
TULAREMIA	1	0	0	0	0	0	0	0	0	0
TRACHOMA	0	2	0	0	0	0	0	0	0	0
PNEUMONIA	2	329	0	1	6	1	0	0	0	0
HOOKWORM	137	362	61	42	187	5	5	85	113	118
TRICHINOSIS	0	1	0	0	0	0	0	0	0	0
UNDULANT	0	2	0	0	0	0	0	0	0	2

TABLE IA (continued)

## REPORTED CASES OF NOTIFIABLE DISEASES IN THE STATE OF FLORIDA

	LEVY	LIBERTY	MADISON	MANATEE	MARION	MARTIN	MONROE	NASSAU	OKALOOSA	OKECHOBEE
TYPHOID	0	0	0	1	0	1	0	2	0	2
PARATYPHOID	0	0	0	0	0	0	0	0	0	0
TYPHUS	0	0	0	0	0	0	0	0	0	0
MALARIA	0	0	4	3	1	0	0	0	1	0
SMALLPOX	0	0	0	0	0	0	0	0	0	0
MEASLES	8	0	1	9	0	0	357	3	3	0
SCARLET FEVER	0	0	1	3	1	0	2	0	0	1
WHOOPING COUGH	0	0	0	0	1	0	10	0	0	0
DIPHTHERIA	2	0	2	7	6	0	2	4	1	0
INFLUENZA	0	0	0	0	0	0	0	1	0	0
MUMPS	0	0	0	0	3	0	0	0	0	0
DYSENTERY	0	0	0	0	0	0	0	0	0	0
LEPROSY	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	1	0	0	0	0	0	0	0	0	0
LETH. ENCEPHALITIS	0	0	0	0	0	0	0	0	0	0
MENINGITIS	0	0	1	0	0	0	0	0	0	0
CHICKENPOX	0	0	0	0	0	0	25	0	0	0
GERMAN MEASLES	0	0	0	0	0	0	0	0	0	0
DENGUE	0	0	0	0	0	0	0	0	0	0
TETANUS	0	0	0	0	0	0	0	0	0	0
RABIES (Human)	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	4	0	5	1	10	0	4	4	0	0
SYPHILIS	21	5	48	125	188	201	25	44	17	1
CHANCROID	0	0	0	0	0	0	4	0	0	0
GONOCOCCUS	2	0	6	2	11	1	27	10	1	0
OPHTH. NEONATORUM	0	0	0	0	0	0	0	0	0	0
CANCER	0	0	0	0	0	0	0	0	0	0
PELLAGRA	4	1	0	0	0	0	0	0	0	0
TULAREMIA	0	0	0	0	0	0	0	0	0	0
TRACHOMA	0	0	0	1	0	0	3	0	0	0
PNEUMONIA	0	0	1	1	0	0	0	0	0	0
HOOKWORM	4	23	73	169	138	8	0	43	8	4
TRICHINOSIS	0	0	0	0	0	0	0	0	0	0
UNDULANT	0	0	2	0	0	0	0	0	0	0



TABLE IA (continued)

## REPORTED CASES OF NOTIFIABLE DISEASES IN THE STATE OF FLORIDA

	ORANGE	OSCEOLA	PALM BEACH	PASCO	PINELLAS	POLK	PUTNAM	ST. JOHNS	ST. LUCIE	SANTA ROSA
TYPHOID	8	0	0	2	6	2	2	0	0	0
PARATYPHOID	0	0	0	0	0	0	0	0	0	0
TYPHUS	6	0	0	1	4	6	0	3	0	0
MALARIA	3	0	1	3	2	6	0	0	0	0
SMALLPOX	0	0	0	0	0	0	0	0	0	0
MEASLES	1178	50	289	0	192	25	4	0	0	0
SCARLET FEVER	27	2	0	2	29	19	1	0	1	0
WHOOPING COUGH	48	0	13	0	79	0	0	0	0	0
DIPHTHERIA	11	0	6	0	31	41	7	2	1	0
INFLUENZA	1	0	0	0	0	0	0	0	0	0
MUMPS	43	0	0	0	61	5	1	0	0	0
DYSENTERY	0	0	1	0	3	0	0	0	0	0
LEPROSY	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	0	0	0	0	2	2	0	0	1	0
LETH. ENCEPHALITIS	0	0	0	0	1	0	0	0	0	0
MENINGITIS	1	0	0	0	1	5	0	0	0	0
CHICKENPOX	131	0	54	0	110	13	1	0	0	0
GERMAN MEASLES	0	0	0	0	0	0	0	0	0	0
DENGUE	0	0	0	0	0	0	0	0	0	0
TETANUS	0	0	0	0	0	0	0	0	0	0
RABIES (Human)	1	0	0	1	0	0	0	0	0	0
TUBERCULOSIS	30	0	6	7	45	25	7	0	4	0
SYPHILIS	957	52	1013	44	564	860	139	205	82	0
CHANCROID	0	0	0	0	0	0	0	0	0	0
GONOCOCCUS	32	0	56	9	32	47	21	2	3	0
OPHTH. NEONATORUM	0	0	0	0	0	0	0	0	0	0
CANCER	8	0	2	0	1	1	0	0	0	0
PELLAGRA	0	0	0	0	0	0	0	0	0	0
TULAREMIA	0	0	0	0	1	0	0	0	0	0
TRACHOMA	3	0	0	0	1	0	0	0	0	0
PNEUMONIA	73	0	0	1	5	1	0	0	2	0
HOOKWORM	142	56	104	64	139	573	69	57	157	4
TRICHINOSIS	0	0	0	0	0	0	0	0	0	0
UNOULANT	1	0	4	0	4	0	0	0	0	1

TABLE IA (continued)

## REPORTED CASES OF NOTIFIABLE DISEASES IN THE STATE OF FLORIDA

	SARASOTA	SEMINOLE	SUNTER	SUWANNEE	TAYLOR	UNION	VOLUSIA	WAKULLA	WALTON	WASHINGTON
TYPHOID	0	0	0	1	1	0	3	1	0	0
PARATYPHOID	0	0	0	0	0	0	0	0	0	0
TYPHUS	2	0	0	2	1	0	1	0	0	0
MALARIA	0	3	1	2	16	7	2	6	0	0
SMALLPOX	0	0	0	0	0	0	7	0	0	0
MEASLES	10	3	0	3	19	31	2	2	0	7
SCARLET FEVER	2	0	0	0	2	0	9	0	0	0
WHOOPING COUGH	0	0	0	0	17	0	8	2	0	2
DIPHTHERIA	6	0	0	0	2	2	9	0	0	0
INFLUENZA	0	0	0	3	2	7	3	0	0	0
MUMPS	2	0	1	0	0	1	1	0	0	0
DYSENTERY	1	0	0	0	0	0	0	1	2	0
LEPROSY	0	0	0	0	0	0	0	0	0	0
POLIOMYELITIS	0	0	0	0	0	0	0	0	0	1
LETH. ENCEPHALITIS	0	0	0	0	0	0	0	0	0	0
MENINGITIS	0	0	0	0	0	0	1	1	0	0
CHICKENPOX	8	0	3	1	20	1	5	0	1	2
GERMAN MEASLES	0	0	0	0	0	0	0	0	0	0
DENGUE	0	0	0	0	0	1	0	0	0	0
TETANUS	0	0	0	1	0	0	0	0	0	0
RABIES (Human)	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	5	6	4	3	4	1	10	0	0	2
SYPHILIS	111	164	18	32	266	444	368	36	20	15
CHANCROID	0	1	1	0	0	0	0	0	0	0
GONOCOCCUS	2	3	1	6	0	10	34	1	4	0
OPHTH. NEONATORUM	0	0	2	0	0	0	0	0	0	0
CANCER	0	0	3	0	0	0	0	4	0	0
PELLAGRA	0	0	0	0	0	5	0	1	0	0
TULAREMIA	0	0	0	0	0	0	0	0	0	0
TRACHOMA	0	0	0	0	0	0	0	0	0	0
PNEUMONIA	0	0	0	2	4	16	1	0	0	0
HOOKWORM	28	36	17	51	170	141	295	32	29	7
TRICHINOSIS	0	0	0	0	0	0	0	0	0	0
UNOULANT	0	0	0	1	1	0	0	0	0	0



EPIDEMIOLOGY

TABLE I

Reported cases of notifiable diseases, deaths, case rate and death rate per 100,000 population, and percent of fatality for Florida, 1934-1938, with 5 year average

Year	Cases	Case Rate Per 100,000 Pop.	Deaths	Death Rate Per 100,000 Pop.	Fatality Per Cent
DIPHTHERIA					
1934	491	29.0	84	5.0	17.0
1935	426	25.0	58	3.4	13.0
1936	309	18.0	57	3.4	15.0
1937	609	36.0	55	3.2	9.0
1938	492	29.0	32	1.9	6.0
5 year average	465	27.0	57	3.4	12.0
INFANTILE PARALYSIS					
1934	16	.9	5	.3	31.0
1935	16	.9	7	.42	43.0
1936	42	2.5	8	.4	19.0
1937	35	2.2	6	.3	17.0
1938	32	1.9	8	.4	25.0
5 year average	28	1.6	6.8	.36	27.0
SCARLET FEVER					
1934	190	11.0	5	.3	2.6
1935	273	16.0	1	.06	.3
1936	299	18.0	2	.12	.7
1937	377	21.0	2	.12	.5
1938	352	21.0	4	.24	1.1
5 year average	298	17.0	2.4	.19	1.0
MEASLES					
1934	8,115	485.0	110	6.9	1.3
1935	1,176	70.0	34	2.0	2.8
1936	307	17.0	7	.4	2.2
1937	635	38.0	5	.3	.7
1938	9,149	548.0	30	1.8	.3
5 year average	2,274	232.0	37	2.3	1.4
WHOOPING COUGH					
1934	723	43.0	110	6.5	15.0
1935	532	31.0	59	3.5	11.0
1936	383	23.0	25	1.5	6.2
1937	540	32.0	59	3.0	11.0
1938	876	52.0	68	4.0	7.7
5 year average	610	36.0	64	3.7	10.2

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EPIDEMIOLOGY

TABLE I (continued)

Year	Cases	Case Rate Per 100,000 Pop.	Deaths	Death Rate Per 100,000 Pop.	Fatality Per cent
EPIDEMIC MENINGITIS					
1934	5	.3	8	4.0	-
1935	19	1.07	13	.7	68.0
1936	120	7.0	58	3.4	48.0
1937	168	10.0	66	3.3	39.0
1938	61	3.6	18	1.1	27.0
5 year average	64	4.39	33	1.8	36.0
INFLUENZA					
1934	65	3.0	394	23.0	-
1935	662	39.0	624	57.0	-
1936	587	35.0	880	55.0	-
1937	544	32.0	658	53.0	-
1938	112	6.0	393	23.0	-
5 year average	394	23.0	586	38.0	-
UNDULANT FEVER					
1934	1	.06	1	.06	-
1935	68	3.4	3	.18	4.4
1936	16	.9	2	.12	12.5
1937	37	2.2	3	.18	7.1
1938	42	2.5	3	.18	7.1
5 year average	33	1.9	2.4	.18	-
TYPHUS					
1934	36	2.1	8	.5	12.2
1935	27	1.6	5	.3	18.5
1936	55	3.3	9	.5	16.5
1937	107	6.4	12	.7	11.2
1938	122	7.3	10	.6	8.2
5 year average	60	3.6	8.8	.5	14.3
PNEUMONIA (All Forms)					
1934	439	-	1,230	73.0	-
1935	451	-	1,101	65.0	-
1936	634	-	1,404	84.0	-
1937	551	-	1,227	73.0	-
1938	727	-	1,220	73.0	-
5 year average	560	-	1,236	73.0	-
MALARIA					
1934	1,106	66.0	445	26.0	40.0
1935	813	48.0	331	19.0	40.0
1936	869	52.0	349	21.0	40.0
1937	894	53.0	205	12.0	23.0
1938	471	28.0	166	9.9	35.0
5 year average	832	49.0	299	17.6	36.0

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EPIDEMIOLOGY

TABLE IB (continued)

Year	Cases	Case Rate Per 100,000 Pop.	Deaths	Death Rate Per 100,000 Pop.	Fatality Per cent
PELLAGRA					
1934	151	-	230	14.0	-
1935	74	-	181	11.0	-
1936	35	-	133	8.0	-
1937	37	-	103	6.0	-
1938	188	-	104	6.0	-
5 year average	103	-	150	9.0	-
TUBERCULOSIS (All Forms)					
1934	603	36.0	953	57.0	-
1935	525	31.0	903	54.0	-
1936	627	37.0	905	54.0	-
1937	1,125	67.0	966	58.0	-
1938	1,177	70.0	987	59.0	-
5 year average	810	53.0	943	56.0	-
CANCER (All Forms)					
1934	211	-	1,325	79.0	-
1935	200	-	1,452	87.0	-
1936	240	-	1,458	87.0	-
1937	233	-	1,622	97.0	-
1938	292	-	1,551	93.0	-
5 year average	235	-	1,681	88.0	-
TYPHOID FEVER					
1934	129	7.7	46	2.7	36.0
1935	169	10.1	58	3.4	34.0
1936	93	5.5	39	2.3	42.0
1937	133	7.8	45	2.9	33.0
1938	160	9.5	46	2.7	28.0
5 year average	137	8.1	47	2.7	34.0

PUBLIC HEALTH NURSING

TABLE II

Midwifery in Florida, 1938					
	White	Colored	Total		
Midwives registered . . . . .	62	545	607		
Midwives licensed, not registered . . . . .	14	64	78		
Class A . . . . .	5	0	5		
Class B . . . . .	10	25	35		
Class C . . . . .	61	584	645		
Midwives having physical examinations . . . . .	50	571	621		
Midwives with positive syphilis . . . . .	2	21	23		
Midwives with positive hookworm . . . . .	1	6	7		
Midwives deceased . . . . .	2	4	6		
Midwives refused license . . . . .	1	14	15		
Midwives license revoked . . . . .	1	3	4		
Stillbirths reported by midwives to the Bureau of Public Health Nursing . . . . .			176		
Live births reported . . . . .			2,466		

MATERNAL AND CHILD HEALTH

TABLE III

Maternal and Child Health activities in Florida reported to  
United States Children's Bureau for year 1938.

COMMUNICABLE DISEASE CONTROL

IMMUNIZATIONS (persons immunized)	
Smallpox	26,716
Diphtheria, under 1 year	2,854
Diphtheria, 1 through 4 years	9,340
Diphtheria, 5 years and over	13,914

SCHOOL HYGIENE

Examinations by physicians	33,084
Examinations by physicians with parents present	3,067
Field nursing visits	41,853
Office nursing visits	13,066
Inspections by dentists or dental hygienists	32,091

ADULT HYGIENE

PHYSICAL EXAMINATIONS	
Midwives	848
Teachers	102

MATERNITY SERVICE

Cases admitted to antepartum medical service	3,813
Cases admitted to antepartum nursing service	9,793
Visits by antepartum cases to medical conferences	9,976
Field and office nursing visits to and by antepartum cases	22,841
Cases given nursing service at delivery	471
Cases given postpartum medical examination	752
Cases admitted to postpartum nursing service	4,634
Nursing visits to postpartum cases	10,168
Midwives under planned instruction	2,262
Midwife meetings	787
Attendance at midwife meetings	3,361
Visits for midwife supervision	2,230
Enrollment in maternity classes	1,173
Attendance at maternity classes	3,301

INFANT AND PRESCHOOL HYGIENE

	Infants	Preschool
Individuals admitted to medical service	3,219	4,629
Individuals admitted to nursing service	5,494	9,294
Visits to medical conferences	3,322	6,752
Field and office nursing visits	15,519	16,947
Inspections by dentists or dental hygienists	-	1,197

Enrollment in infant and preschool classes 2,530

Attendance at infant and preschool classes 1,897

## LABORATORIES

TABLE IV

Summary report of the  
central and branch laboratories  
for the year 1938

	POSITIVE	NEGATIVE	PARTIAL	UNSATISFACTORY	TOTAL	GRAND TOTAL
<u>INTERTINAL PARASITES</u>						
Hookworm	12,828	39,033		589	52,450	
Ascaris lumbricoides	861				861	
Oxyuris vermicularis	246				246	
Strongyloides intest.	57				57	
Tapeworm	99				99	
Trichocephalus dispar	486				486	54,199
THROAT - Virulence test	2	1			3	
Diphtheria	622	15,143		106	15,871	
Vincent's angina	1,238	2,615		40	3,893	
Streptococcus	113	269		1	383	20,150
<u>MALARIA</u>						
Tertian	282	19,307		51	19,640	
Estivo-Autumnal	129				129	
Untyped	22				22	19,791
<u>AGGLUTINATION TESTS</u>						
Typhoid	108	15,840	243	41	16,232	
Para Alpha	5	3,559	15	1	3,580	
Para Beta	13	3,547	19	1	3,580	
Brucella abortus	60	2,463	5	97	2,625	
Spotted Fever		2			2	
Weil Felix	98	3,922	79	2	4,101	
Tularensis	6	554	6	4	570	30,690
<u>CULTURES</u>						
Blood		54	1		55	
Stool and Urine	7	961	6	5	979	1,034
<u>TUBERCULOSIS</u>						
Microscopic	1,288	8,089		48	9,425	
Inoculation					6	9,431
<u>OPHTHALMIA</u>						
Gon.	26	352		11	389	389
GONORRHEA	3,556	24,651		124	28,331	28,331
<u>SYPHILIS</u>						
Kahn	36,355	187,560	7,460	10,976	242,351	242,351
Other	166	178	7	2	353	353
<u>RABIES - Human</u>						
Dogs	331	372		28	731	
Cats	11	66		9	86	
Other animals	2	23		2	27	845
BRONCHIAL SPIROCHAETOSIS	45	1,988		10	2,043	2,043
LEPROSY	2	3		6	11	11

WATER	Samples Received	8,744	Tests Made	10,469	10,469
MILK	" "	6,538	" "	9,168	9,168
ICE CREAM	" "	622	" "	639	639
MISCELLANEOUS	" "		" "		
Smears and cultures for organisms		591	" "	591	591
Total				430,485	430,485

## LABORATORIES

TABLE V

Annual report of the  
Jacksonville laboratory  
for the year 1938

	POSITIVE	NEGATIVE	PARTIAL	UNSATISFACTORY	TOTAL	GRAND TOTAL
<u>INTERTINAL PARASITES</u>						
Hookworm	7,504	24,481		450	32,435	
Ascaris lumbricoides	454				454	
Oxyuris vermicularis	106				106	
Strongyloides intest.	32				32	
Tapeworm	52				52	
Trichocephalus dispar	151				151	33,230
THROAT - Virulence Test	2	1			3	
Diphtheria	182	6,304		6	6,492	
Vincent's angina	136	571			707	
Streptococcus	36	127			163	7,365
<u>MALARIA</u>						
Tertian	148	13,853		14	14,015	
Estivo-Autumnal	79				79	
Untyped						14,094
<u>AGGLUTINATION TESTS</u>						
Typhoid	76	11,921	83	27	12,107	
Para Alpha	3	1,918	9		1,930	
Para Beta	7	1,912	11		1,930	
Brucella abortus	25	1,769		61	1,855	
Spotted Fever		2			2	
Weil Felix	53	2,269	54		2,376	
Tularensis	5	523	5	3	536	20,736
<u>CULTURES</u>						
Blood		44	1		45	
Stool and Urine	7	467	5		479	524
<u>TUBERCULOSIS</u>						
Microscopic	461	4,577		18	5,056	
Inoculation					6	5,062
<u>OPHTHALMIA</u>						
Gon.	6	134			140	140
GONORRHEA	1,791	13,096		31	14,918	14,918
<u>SYPHILIS</u>						
Kahn	24,113	98,152	2,297	7,401	131,963	131,963
Other: Evaluation test	166	178	7	2	353	353
<u>RABIES - Human</u>						
Dogs	190	232		15	437	
Cats	5	46		6	57	
Other animals	1	18		2	21	516
BRONCHIAL SPIROCHAETOSIS	45	1,988		10	2,043	2,043
LEPROSY	1				1	1

WATER	Samples Received	5,936	Tests Made	5,936	5,936
MILK	" "	921	" "	1,870	1,870
ICE CREAM	" "	26	" "	26	26
MISCELLANEOUS	" "		" "		
Cultures and smears for organisms				300	300
Total				239,077	239,077



### TABLE VI

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
<b>ANIMAL PARASITES</b>														
<b>HOOKWORM</b>														
Pos.	557	696	816	687	448	388	386	451	602	767	730	976	7504	
Neg.	1601	1838	1948	2460	2595	1572	1553	1878	2333	2116	2061	2526	24481	
Unsat.	26	32	19	88	35	17	16	8	39	44	19	107	450	
ASCARIS	25	34	23	31	32	27	41	43	53	38	44	63	454	
OXYURIS	11	16	21	14	8	2	6	3	6	2	4	13	106	
STRONGLOIDES	1	4	3	2			1	1	3	6	4	7	32	
TAPEWORM	8	4	8	9		3	5	2	3		3	7	52	
TRICHIURIS	7	11	24	14	2	14	20	8	8	4	8	31	151	33230
<b>THROAT CULTURES</b>														
<b>DIPHTHERIA</b>														
Pos.	47	39	18	9	6	4	7	5	7	15	12	13	182	
Neg.	1003	830	591	380	280	344	315	265	457	600	790	449	6304	
Unsat.		2	2							1	1		6	
VIRULENCE TESTS							1					2	3	6495
VINCENTS ANGINA														
Pos.	11	6	10	13	10	10	16	17	5	16	16	6	136	
Neg.	40	51	64	48	53	39	42	61	48	40	48	37	571	707
STREPTOCOCCUS														
Pos.	6	1	2	1	1	10	2		3	3	3	4	36	
Neg.	8	16	8	5	3	4	10	11	8	9	28	17	127	163
<b>MALARIA</b>														
Pos.	9	11	13	14	24	24	27	30	25	27	12	11	227	
Neg.	783	886	1196	1132	1414	1449	1426	1649	1412	976	877	653	13853	
Unsat.		2		2	2	1		2	3	2			14	14094
<b>AGGLUTINATION TESTS</b>														
<b>TYPHOID</b>														
Pos.	3	1	1	2	7	7	6	20	20	6		3	76	
Neg.	680	798	1067	1003	1274	1304	1300	1490	1062	748	627	568	11921	
Partial	2	1		3	8	9	12	20	17	8	1	2	83	
Unsat.		2		1	4		3	4	9	3		1	27	12107
PARA TYPHOID A														
Pos.							2		1				3	
Neg.	120	140	125	151	245	260	265	292	130	86	58	46	1918	
Partial							1	4	4				9	1930
PARA TYPHOID B														
Pos.								4	2	1			7	
Neg.	120	140	125	151	245	260	265	290	130	82	58	46	1912	
Partial							1	4	3	3			11	1930
WEIL FELIX														
Pos.		7	4	1	12	4	4	6	4		3	8	53	
Neg.	118	132	120	149	225	250	256	300	280	164	145	130	2269	
Partial	2	1	1	1	8	6	6	8	7	4	2	8	54	2376
BRUCELLA ABORTUS														
Pos.		3	2	2	1	3	5	5	2		1	1	25	
Neg.														

LABORATORIES

TABLE VI (continued)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
<b>TYPHOID CULTURES</b>														
Blood Pos.	4	2	6	5	3	5	4	6	3	3	1	2	44	
Partial										1			1	45
Stool and Urine														
Pos.				3	4								7	
Neg.	30	72	47	19	32	45	49	60	23	41	27	22	467	
Partial					3	2							5	479
<b>TUBERCULOSIS :</b>														
<b>MICROSCOPIC</b>														
Pos.	45	33	42	38	41	36	35	30	39	47	46	29	461	
Neg.	309	335	448	344	336	310	298	283	752	524	310	328	4577	
Unsat.	3	2	2	1	1	2			2	2	3		18	5056
<b>ANIMAL INOCULATIONS</b>	1	1				4							6	6
<b>BRONCHIAL SPIRO- CHAETOSIS</b>														
Pos.	7	7	19	4	7	1							45	
Neg.	347	361	471	378	370	61							1988	
Unsat.	3	2	2	1	1	1							10	2043
<b>OPHTHALMIA</b>														
Pos.			1		1		1	1			1	1	6	
Neg.	13	10	14	15	7	11	6	17	16	8	10	7	134	140
<b>GONORRHEA</b>														
Pos.	187	180	180	151	127	121	150	119	117	155	172	132	1791	
Neg.	1013	990	1127	1074	1118	1074	1227	1286	1042	963	1040	1142	13096	
Unsat.	1	1	2	2		1	7	1	1	6	6	3	31	14918
<b>SYPHILIS</b>														
<b>KAHN</b>														
Pos.	1771	1719	2093	1980	1817	1910	1878	1899	2359	2242	2459	1986	24113	
Neg.	7599	7563	8503	7884	7266	7621	8141	8099	9417	8377	8595	9087	98152	
Doubtful	146	189	158	142	161	196	215	236	326	182	196	150	2297	
Unsat.	518	475	558	559	662	595	776	936	790	455	539	538	7401	131963
<b>EVALUATION TEST</b>														
Pos.	69	74	4	19									166	
Neg.	61	97	7	13									178	
Doubtful	3	4											7	
Unsat.		2											2	353
<b>RABIES</b>														
<b>DOG:</b>														
Pos.	33	26	26	25	24	9	8	7	7	5	10	10	190	
Neg.	39	31	24	24	15	14	17	13	11	14	13	17	232	
Unsat.	1	3	2	2		2			3		1	1	15	437
<b>CAT:</b>														
Pos.		1	1		1	1	1						5	
Neg.	3	7	4	3	5	2	3	4	1	7	4	3	46	
Unsat.	1		1	1	1				1		1		6	57
<b>HUMAN:</b>													1	1
<b>OTHER ANIMALS</b>														
Pos.					1								1	
Neg.	2			3	2	1	1	1	2	2	1	3	18	
Unsat.					2								2	21
<b>LEPROSY</b>						1							1	1
<b>WATER</b>	348	531	468	485	515	653	604	353	476	484	461	558	5936	5936
<b>MILK</b>	196	186	154	169	150	153	136	160	182	154	106	124	1870	1870
<b>ICE CREAM</b>	10				1	3						12	26	26
<b>MISCELLANEOUS</b>	28	20	32	35	16	17	60	19	17	13	30	13	300	300
<b>TOTAL</b>	18096	18755	20755	19932	19846	19093	19838	20766	22583	19643	19728	20042	239077	239077

## LABORATORIES

TABLE VII

Annual report of the Tampa laboratory for the year 1938						
	POSITIVE	NEGATIVE	PARTIAL	UNSATISFACTORY	TOTAL	GRAND TOTAL
<u>INTERTINAL PARASITES</u>						
Hookworm	2,929	8,662		17	11,608	
Ascaris lumbricoides	332				332	
Oxyuris vermicularis	110				110	
Strongyloides intest.	23				23	
Tapeworm	25				25	
Trichocephalus dispar	324				324	12,422
<u>THROAT</u>						
Diphtheria	340	2,259		8	2,607	
Vincent's angina	588	650		1	1,239	
Streptococcus	34	27			61	3,907
<u>MALARIA</u>						
Tertian	47	2,253		1	2,301	
Estivo-Autumnal	7				7	
Untyped	17				17	2,325
<u>AGGLUTINATION TESTS</u>						
Typhoid	22	2,259	109	8	2,398	
Para Alpha		377			377	
Para Beta		377			377	
Brucella abortus	18	387	5	2	412	
Brucella melitensis						
Weil Felix	35	316	9	2	362	
Tularensis	1	31	1	1	34	3,960
<u>CULTURES</u>						
Blood		5			5	
Stool and Urine		113	1	1	115	120
<u>TUBERCULOSIS</u>						
Microscopic	519	2,059		10	2,588	2,588
Inoculation						
<u>OPHTHALMIA</u>						
Gon.	8	159		11	178	178
GONORRHEA	937	4,447		36	5,420	5,420
<u>SYPHILIS</u>						
Kahn	4,732	35,561	2,190	1,527	44,010	
Other						44,010
<u>RABIES</u>						
Dogs	97	88		10	195	
Cats	2	18		3	23	
Other Animals	1	3			4	222
LEPROSY	1				1	1
WATER	Samples Received	876		Tests Made	876	876
MILK	" "	1,671		" "	3,342	3,342
ICE CREAM	" "	342		" "	342	342
<u>MISCELLANEOUS</u> "						
Cultures and smears for organisms		171			171	171
Total						79,884

## LABORATORIES

TABLE VIII

Report of the Tampa laboratory by months for the year 1938															
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total	
<u>ANIMAL PARASITES</u>															
<u>HOOKWORM</u>															
Pos.	141	187	562	344	237	171	143	196	158	310	187	293	2929		
Neg.	416	576	1226	1103	665	579	460	539	462	691	966	979	8662		
Unsat.				11	5					1			17		
ASCARIS	16	20	80	23	41	26	24	19	8	10	46	19	332		
OXYURIS	4	5	28	16	9	6	6	2	5	11	7	11	110		
STRONGYLOIDES	1		2	1	1	6			1	7	3	1	23		
TAPEWORM	3	1	4	2	3	2	3	1		1	2	3	25		
TRICHIURIS	9	24	51	20	44	42	21	26	36	14	14	23	324	12422	
<u>THROAT CULTURES</u>															
<u>DIPHTHERIA</u>															
Pos.	23	36	58	42	14	15	16	22	8	32	50	24	340		
Neg.	136	198	254	314	153	115	122	151	99	290	255	172	2259		
Unsat.	1	3		4									.8	2607	
<u>VINCENTS ANGINA</u>															
Pos.	34	42	47	50	50	35	37	63	62	67	55	46	588		
Neg.	52	64	57	49	62	49	35	53	40	63	70	56	650		
Unsat.						1							1	1239	
<u>STREPTOCOCCUS</u>															
Pos.	2	5	3	1	2	2	1	2	4	4	1	7	34		
Neg.	2	8	2					3		6	3	3	27	61	
<u>MALARIA</u>															
Pos.	1	3	7	10	8	3	2	16	2	7	4	8	71		
Neg.	155	184	180	210	233	213	205	220	210	147	177	119	2253		
Unsat.						1							.1	2325	
<u>AGGLUTINATION TESTS</u>															
<u>TYPHOID</u>															
Pos.	4		1	2	2	1	2		4		2	4	22		
Neg.	135	168	167	211	230	221	226	258	219	140	154	130	2259		
Partial	11	6	6	7	10	12	16	11	4	13	12	1	109		
Unsat.						2	1	3	1			1	.8	2398	
<u>PARA TYPHOID A</u>															
Neg.	5	18	14	32	34	37	55	48	48	35	31	20	377	377	
<u>PARA TYPHOID B</u>															
Neg.	5	18	14	32	34	37	55	48	48	35	31	20	377	377	
<u>WEIL FELIX</u>															
Pos.	1	3	2	1	2	7	6	4	5	3		1	35		
Neg.	8	12	10	27	26	25	51	44	36	27	30	20	316		
Partial		1	1	1		2				2	1	1	9		
Unsat.						1		1					2	362	
<u>BRUCELLA ABORTUS</u>															
Pos.		1	2			1	1		6	4		1	18		
Neg.	8	18	11	33	27	41	61	57	44	33	31	23	387		
Partial				1		1					2	1	5		
Unsat.						1		1					2	412	
<u>TULAREMIA</u>															
Pos.		1											1		
Neg.		3	2	1	2	5	1	1	4	4	3	5	31		
Partial												1	1		
Unsat.						1							1	34	
<u>TYPHOID CULTURES</u>															
<u>BLOOD</u>															
Neg.		1	1				1		1			1	5	5	

(continued on next page)

## LABORATORIES

TABLE VIII (continued)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
TYPHOID CULTURES (continued)														
STOOL AND URINE														
Pos.	6	4	5	5	6	3	10	3	5	34	27	5	113	
Partial												1	1	
Unsat.		1											1	115
TUBERCULOSIS														
MICROSCOPIC														
Pos.	22	54	64	24	53	54	23	44	49	45	45	42	519	
Neg.	129	201	242	134	189	138	133	153	280	152	136	172	2059	
Unsat.	2		3			1		3		1			10	2588
OPHTHALMIA														
Pos.			2	1	1					1	2	1	8	
Neg.	8	8	9	7	14	12	8	35	28	9	14	7	159	
Unsat.			2	1		1	2	3				2	11	178
GONORRHEA														
Pos.	75	85	104	85	70	86	78	71	77	80	51	75	937	
Neg.	377	362	408	444	357	378	337	370	341	374	369	330	4447	
Unsat.	1	1	4	3	2	17	1			1	1	5	36	5420
SYPHILIS														
KAHN														
Pos.	376	356	464	337	325	362	300	407	401	485	523	396	4732	
Neg.	3630	3055	3406	2587	2601	2376	2523	2201	2876	3275	3425	3606	35561	
Doubtful	269	225	240	244	168	132	165	162	185	190	112	98	2190	
Unsat.	217	166	149	123	118	111	101	104	96	106	128	108	1527	44010
LEPROSY														
Pos.				1									1	1
RABIES														
DOG														
Pos.	11	5	9	10	13	13	9	4	6	6	6	5	97	
Neg.	10	6	10	6	12	15	5	6	3	4	7	4	88	
Unsat.				1		1	3	1	1		3		10	
CAT														
Pos.	1									1			2	
Neg.	5	4	1	1	2	2	3						18	
Unsat.							3						3	
OTHER ANIMALS														
Pos.						1							1	
Neg.		1	1	1									3	222
WATER	45	40	43	83	100	142	52	136	63	65	51	56	876	876
MILK	250	260	272	340	532	262	270	252	248	212	244	200	3342	3342
ICE CREAM	40	24	30	27	29	28	27	28	26	27	26	30	342	342
MISCELLANEOUS	16	31	22	13	19	8	12	14	11	7	7	11	171	171
TOTAL	6663	6495	8282	7026	6505	5804	5616	5786	6211	7032	7316	7148	79884	79884

## LABORATORIES

TABLE IX

Annual report of the Miami laboratory for the year 1938							
	POSITIVE	NEGATIVE	PARTIAL	UNSATISFACTORY	TOTAL	GRAND TOTAL	
INTERTINAL PARASITES							
Hookworm	169	1,862		34	2,065		
Ascaris lumbricoides	9				9		
Oxyuris vermicularis	6				6		
Strongloides intest.							
Tapeworm	6				6		
Trichocephalus dispar	3				3		2,089
THROAT							
Diphtheria	9	5,769		91	5,869		
Vincent's angina	156	592		39	787		
Streptococcus	2	69		1	72		6,728
MALARIA							
Tertian	4	357		6	367		
Estivo-Autumnal	1				1		
Untyped							368
AGGLUTINATION TESTS							
Typhoid		605	1	4	610		
Para Alpha		605		1	606		
Para Beta		280		34	314		
Brucella abortus	17				17		
Brucella melitensis							
Weil Felix		604	2		606		
Tularensis							2,759
CULTURES							
Blood							
Stool and Urine		292		4	296		296
TUBERCULOSIS							
Microscopic	126	570		11	707		
Inoculation							707
OPHTHALMIA							
Con.	2	11			13		13
GONORRHEA	313	4,573		48	4,934		4,934
SYPHILIS							
Kahn	4,871	41,256	2,405	1,470	50,002		
Other							50,002
RABIES							
Dogs		22			22		
Cats		1			1		
Other animals		2			2		25
LEPROSY		3		6	9		9
WATER							
Samples Received	1,778						
MILK							
Tests Made					3,496		3,496
ICE CREAM							
"	2,428				2,923		2,923
MISCELLANEOUS							
"	217				217		217
Cultures and smears for organisms		34			34		34
Total							74,600



## LABORATORIES

## TABLE X

Report of the Miami laboratory  
by months for the year 1938

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
<b>ANIMAL PARASITES</b>														
<b>HOOKWORM</b>														
Pos.	32	23	40	25	23	4		7	1	6	4	4	169	
Neg.	159	133	176	222	310	142	136	142	109	107	125	101	1862	
Unsat.	7	2	1	4	4	4	1	2	5		4		34	
<b>ASCARIS</b>														
Pos.				3	1			2	1				9	
Neg.				1	1	3		1					6	
<b>OXYURIS</b>														
Pos.				1	1								2	
Neg.				2	2	1							6	
<b>TAPEWORM</b>														
Pos.	1												1	
Neg.													1	
<b>TRICHIURIS</b>														
Pos.				1									1	
Neg.													1	
<b>THROAT CULTURES</b>														
<b>DIPHTHERIA</b>														
Pos.	2			1	1		1		2	1	1		9	
Neg.	721	440	284	231	168	104	134	67	1926	558	815	321	5769	
Unsat.	8	3		4		1			57	12	6		91	5869
<b>VINCENTS ANGINA</b>														
Pos.	14	5	9	15	13	5	18	17	7	17	20	16	156	
Neg.	57	42	82	87	53	47	46	35	53	25	32	33	592	
Unsat.	20	13	4	2									39	787
<b>STREPTOCOCCUS</b>														
Pos.		1							1				2	
Neg.		2	7	27	5	2	5	3	7	4	6	1	69	
Unsat.				1									1	72
<b>MALARIA</b>														
Pos.				1				3	1				5	
Neg.	26	38	45	29	20	27	27	38	41	25	19	22	357	
Unsat.		1			1	1				3			6	368
<b>AGGLUTINATION TESTS</b>														
<b>TYPHOID</b>														
Neg.	43	43	62	54	51	54	56	62	50	48	45	37	605	
Partial.		1			1				2	1			4	610
Unsat.														
<b>PARA TYPHOID A</b>														
Neg.	43	44	62	54	51	54	56	62	50	47	45	37	605	
Unsat.					1								1	606
<b>PARA TYPHOID B</b>														
Neg.	43	44	62	54	51	54	56	62	50	47	45	37	605	
Unsat.					1								1	606
<b>WEIL FELIX</b>														
Neg.	43	44	62	53	51	54	56	62	50	47	45	37	604	
Partial				1	1								2	606
<b>BRUCELLA ABORTUS</b>														
Pos.			1		2	1	1	2		3	5	2	17	
Neg.	16	8	21	28	37	32	25	34	18	21	22	18	280	
Unsat.	3	2	1	2	2		8	2	5	6	1	2	34	331
<b>TYPHOID CULTURES</b>														
<b>STOOL AND URINE</b>														
Neg.	59	23	28	20	27	18	20	24	25	17	12	19	292	
Unsat.	1		2			1							4	296
<b>TUBERCULOSIS</b>														
<b>MICROSCOPIC</b>														
Pos.	17	7	19	7	4	23	8	11	12	10		8	126	
Neg.	66	72	69	44	53	35	49	49	27	40	23	43	570	
Unsat.	6		1	1	2							1	11	707

(continued on next page)

## LABORATORIES

## TABLE X (continued)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
<b>OPHTHALMIA</b>														
Pos.		1			1								2	
Neg.	1		2	4		2				1		1	11	13
<b>GONORRHEA</b>														
Pos.	34	40	32	27	15	11	11	28	14	36	37	28	313	
Neg.	496	447	506	364	284	295	276	313	356	379	428	429	4573	
Unsat.	6	2	4	6	1	2	5	3	6	4	4	5	48	4934
<b>SYPHILIS</b>														
<b>KAHN</b>														
Pos.	662	417	386	308	315	311	305	351	404	440	552	420	4871	
Neg.	5481	3478	3221	2531	2251	2360	2489	2548	2869	3583	4436	6009	41256	
Doubtful	251	186	244	214	167	148	123	115	159	289	237	272	2405	
Unsat.	162	133	115	101	110	100	116	116	149	110	109	149	1470	50002
<b>RABIES</b>														
<b>DOG</b>														
Neg.	4	4		2	2	1	1		4	1	3		22	
<b>CAT</b>														
Neg.								1					1	
<b>OTHER ANIMALS</b>														
Neg.						2							2	25
<b>LEPROSY</b>														
Neg.					3								3	
Unsat.					4	2							6	9
<b>WATER</b>														
MILK	270	238	208	264	362	310	220	396	362	336	240	290	3496	3496
ICE CREAM	306	253	240	296	195	298	167	171	411	244	167	175	2923	2923
MISCELLANEOUS	19	24	18	19	18	21	20	21		19	19	19	217	217
		23		3	3			2				3	34	34
<b>TOTAL</b>														
	9080	6237	6014	5113	4668	4530	4438	4750	7234	6487	7509	8540	74600	74600

## LABORATORIES

TABLE XI

Annual report of the  
Pensacola laboratory  
for the year 1938

	POSITIVE	NEGATIVE	PARTIAL	UNSATISFACTORY	TOTAL	GRAND TOTAL
<u>INTERTINAL PARASITES</u>						
Hookworm	1,214	2,816		58	4,088	
Ascaris lumbricoides	27				27	
Oxyuris vermicularis	15				15	
Strongyloides intest.	2				2	
Tapeworm	12				12	
Trichocephalus dispar	6				6	4,154
<u>THROAT</u>						
Diphtheria	85	634		1	720	
Vincent's angina	326	668			994	
Streptococcus	39				39	1,753
<u>MALARIA</u>						
Tertian	41	1,027			1,068	
Estivo-Autumnal	29				29	
Untyped	5				5	1,102
<u>AGGLUTINATION TESTS</u>						
Typhoid	10	822	46	1	879	
Para Alpha	2	601	5		608	
Para Beta	6	595	7		608	
Brucella abortus		27			27	
Brucella melitensis						
Weil Felix	10	602	12		624	
Tularensis						2,746
<u>CULTURES</u>						
Blood		5			5	
Stool and Urine		89			89	94
<u>TUBERCULOSIS</u>						
Microscopic	162	476		5	643	
Inoculation						643
<u>OPHTHALMIA</u>						
Gon.	9	38			47	47
GONORRHEA	335	1,693		9	2,037	2,037
<u>SYPHILIS</u>						
Kahn	871	6,230	434	240	7,775	
Other						7,775
<u>RABIES</u>						
Dogs	44	30		3	77	
Cats	4	1			5	
Other animals						82
<u>WATER</u>						
Samples Received		147		Tests Made	147	147
MILK		329		" "	661	661
ICE CREAM		37		" "	54	54
MISCELLANEOUS						
Cultures and smears for organisms		58			58	58
					Total	21,353

## LABORATORIES

TABLE XII

Report of the Pensacola laboratory  
by months for the year 1938

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
<u>ANIMAL PARASITES</u>														
<u>HOOKWORM</u>														
Pos.	80	85	84	122	149	131	37	102	148	126	106	44	1214	
Neg.	175	248	323	313	220	280	248	163	238	233	221	154	2816	
Unsat.	1	1	9	22	2	2	1	4	2	5	9	2	58	
<u>ASCARIS OXYURIS</u>														
Pos.	3	3	4	2	2	1	1	1	4				27	
Neg.	1	1	1	1	1	1	2	2	1	2	2	1	15	
Unsat.													2	
<u>STRONGYLOIDES</u>														
Pos.	2	1	1	2	1	2	1	1	1	2		2	16	
Neg.													6	4154
Unsat.														
<u>TAPWORM</u>														
Pos.														
Neg.														
Unsat.														
<u>THROAT CULTURES</u>														
<u>DIPHTHERIA</u>														
Pos.	1	3	2	6	2	2	2	21	29	13	3	1	85	
Neg.	19	23	20	45	50	29	29	135	123	95	43	20	634	
Unsat.							1						1	720
<u>VINCENTS ANGINA</u>														
Pos.	24	28	30	23	22	16	22	44	31	42	31	13	326	
Neg.	37	29	57	31	39	46	56	59	69	170	45	30	668	994
Unsat.														
<u>STREPTOCOCCUS</u>														
Pos.	3	2	7		1	1	5			16	4		39	39
Neg.														
Unsat.														
<u>MALARIA</u>														
Pos.			1	2	2	9	13	11	14	13	7	3	75	
Neg.	29	50	74	87	114	137	105	129	121	87	69	25	1027	1102
Unsat.														
<u>AGGLUTINATION TESTS</u>														
Pos.		4	2	1	1						2		10	
Neg.	16	27	40	74	77	121	89	121	107	73	51	26	822	
Partial	5	1	7	5	1	7	2	6	6	3	3		46	
Unsat.					1								1	879
<u>PARA TYPHOID A</u>														
Pos.				1			1						2	
Neg.	20	32	49	78	36	124	49	51	58	40	40	24	601	
Partial	1					1	2		1				5	608
<u>PARA TYPHOID B</u>														
Pos.				2	1						3		6	
Neg.	21	32	49	76	35	124	52	51	57	40	35	23	595	
Partial				1		1			2		2	1	7	608
<u>WEIL FELIX</u>														
Pos.				1		2	2	2	2	1			10	
Neg.	22	32	48	77	35	121	48	50	56	43	45	25	602	
Partial			1	1	1	3	3		1	2			12	624
<u>BRUCELLA ABORTUS</u>														
Neg.											17	10	27	27
<u>TYPHOID CULTURES</u>														
BLOOD		2		1			1				1		5	5
STOOL AND URINE														
Neg.	21	8	2	20	6	8	6	8	6	4			89	89
<u>TUBERCULOSIS</u>														
<u>MICROSCOPIC</u>														
Pos.	12	19	4	13	5	9	11	6	25	23	21	14	162	
Neg.	44	47	19	32	34	37	37	43	110	27	22	24	476	
Unsat.		2			1	1					1		5	643
<u>OPHTHALMIA</u>														
Pos.		2	1	1		1	1		2		1		9	
Neg.	3	4	3	2	3	1	3	4	4	5	1	5	38	47

(continued on next page)

## LABORATORIES

TABLE XII (continued)

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
<u>GONORRHEA</u>														
Pos.	18	23	30	36	21	26	30	27	36	29	32	21	335	
Neg.	106	143	171	161	189	138	119	184	120	149	104	103	1693	
Unsat.					2	1			2	4			9	2037
<u>SYPHILIS</u>														
KAHN														
Pos.	55	49	71	58	137	98	75	106	110	95	17		871	
Neg.	455	458	561	522	637	737	607	815	727	594	117		6230	
Doubtful	71	38	54	42	17	48	28	39	40	43	14		434	
Unsat.	12	6	9	9	17	30	32	70	41	13	1		240	7775
<u>RABIES</u>														
DOG														
Pos.			1	1	3	4	2	3	9	12	6	3	44	
Neg.	2			3	1		3	1	2	9	6	3	30	
Unsat.						1		1	1				3	
CAT							1	1		1	1		4	
Pos.	1												1	82
Neg.														
<u>WATER</u>	4	12	15	17	25	22	7	7	11	9	12	6	147	147
<u>MILK</u>	38	80	34	46	32	36	95	88	52	52	62	46	661	661
<u>ICE CREAM</u>	1	1	8	10		1		18	8	5	2		54	54
<u>MISCELLANEOUS</u>	10	1	5	3	4	4	8	3	6	4	3	7	58	58
<b>TOTAL</b>	1312	1497	1805	1950	1926	2365	1837	2377	2389	2088	1165	642	21353	21353

## LABORATORIES

TABLE XIII

Annual report of the Tallahassee laboratory for the year 1938							
	POSITIVE	NEGATIVE	PARTIAL	UNSATISFACTORY	TOTAL	GRAND TOTAL	
<u>INTERTINAL PARASITES</u>							
Hookworm	1,012	1,212		30	2,254		
Ascaris lumbricoides	39				39		
Oxyuris vermicularis	9				9		
Strongyloides intest.							
Tapeworm							
Trichocephalus dispar	2				2	2,304	
<u>THROAT</u>							
Diphtheria	6	177			183		
Vincent's angina	32	134			166		
Streptococcus	2	46			48	397	
<u>MALARIA</u>							
Tertian	42	1,817		30	1,889		
Estivo-Autumnal	13				13		
Untyped						1,902	
<u>AGGLUTINATION TESTS</u>							
Typhoid		233	4	1	238		
Para Alpha		58	1		59		
Para Beta		58	1		59		
Brucella abortus							
Brucella melitensis							
Weil Felix		131	2		133	489	
Tularensis							
<u>CULTURES</u>							
Blood							
Stool and Urine							
<u>TUBERCULOSIS</u>							
Microscopic	20	407		4	431		
Inoculation						431	
<u>OPHTHALMIA</u>							
Gen.	1	10			11	11	
<u>GONORRHEA</u>	180	842			1,022	1,022	
<u>SYPHILIS</u>							
Kahn	1,768	6,361	134	338	8,601	8,601	
Other							
<u>RABIES</u>							
Dogs							
Cats							
Other animals							
<u>WATER</u>	Samples Received	7			14	14	
<u>MILK</u>	" "	189		Tests Made	372	372	
<u>ICE CREAM</u>	" "			" "			
<u>MISCELLANEOUS</u>	" "						
Cultures and smears for organisms		28			28	28	
<b>Total</b>						15,571	



## LABORATORIES

TABLE XIV

Report of the Tallahassee laboratory  
by months for the year 1938

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	Grand Total
<b>ANIMAL PARASITES</b>														
<b>HOOKWORM</b>														
Pos.	102	147	115	51	108	84	107	133	30	44	64	27	1012	
Neg.	105	145	104	67	137	133	122	142	54	95	77	31	1212	
Unsat.	6	1	10		2	1		1		1	8		30	
ASCARIS		6	4	3	5	1	9	6		1	1	2	39	
OXYURIS	1	1	1	1	1	1	1	1					9	
TRICHIURIS						2							2	2304
<b>THROAT CULTURES</b>														
<b>DIPHTHERIA</b>														
Pos.	2							2		1	1		6	
Neg.	24	26	20	14	10	15	8	10	8	18	20	4	177	183
<b>VINCENTS ANGINA</b>														
Pos.	1	5	1	2	1	1	1	3	2	8	6	1	32	
Neg.	17	13	12	8	13	15	4	14	3	17	18		134	166
<b>STREPTOCOCCUS</b>														
Pos.										1	1		2	
Neg.	8	2	9	3	4	4	2	5	2	3	3	1	46	48
<b>MALARIA</b>														
Pos.	2	2	2	4	4	10	5	7	4	6	8	1	55	
Neg.	88	86	118	156	232	213	215	298	125	159	94	33	1817	
Unsat.			1					29					30	1902
<b>AGGLUTINATION TESTS</b>														
<b>TYPHOID</b>														
Neg.	9	10	16	16	27	25	31	62	15	15	5	2	233	
Partial			2				1	1					4	
Unsat.					1								1	238
<b>PARA TYPHOID A</b>														
Neg.	4	4	9	6	7	4	11	8	2	1	2		58	
Partial			1										1	59
<b>PARA TYPHOID B</b>														
Neg.	4	4	9	6	7	4	11	8	2	1	2		58	
Partial			1										1	59
<b>WEIL FELIX</b>														
Neg.	6	7	12	6	14	10	21	30	10	7	4	4	131	
Partial								1					2	133
<b>TUBERCULOSIS</b>														
<b>MICROSCOPIC</b>														
Pos.	4		4	5	4		1				1	1	20	
Neg.	37	42	31	51	55	21	36	35	14	49	31	11	407	
Unsat.	1	1		2									4	431
<b>OPHTHALMIA</b>														
Pos.						1							1	
Neg.		1		2	1		2	1			2	1	10	11
<b>GONORRHEA</b>														
Pos.	29	20	21	10	14	22	10	9	3	17	20	5	180	
Neg.	97	103	79	76	101	82	76	70	27	38	58	35	842	1022
<b>SYPHILIS</b>														
<b>KAHN</b>														
Pos.	170	188	166	164	167	143	168	216	97	238	51		1768	
Neg.	645	564	637	576	714	597	599	840	362	647	167	13	6361	
Doubtful	9	11	13	16	16	13	12	11	11	19	3		134	
Unsat.	23	24	19	22	67	25	40	61	25	20	7	5	338	8601
<b>WATER</b>														
					2								12	14
<b>MILK</b>														
	28	39	32	44	39	33	51	8	8	26	61	3	372	372
<b>MISCELLANEOUS</b>														
	1	1		1	4	9		4	6	1	1		28	28
<b>TOTAL</b>	<b>1423</b>	<b>1453</b>	<b>1450</b>	<b>1312</b>	<b>1756</b>	<b>1471</b>	<b>1538</b>	<b>2016</b>	<b>810</b>	<b>1433</b>	<b>717</b>	<b>192</b>	<b>15571</b>	<b>15571</b>

## MULTIGRAPHING

TABLE XV

1938	Sheets Multigraphed	Sheets Mimeographed	Sheets Perforated	Sheets Punched	Sheets Numbered	Sheets Assembled
January	163,315	62,833	13,120	1,000	1,000	25,410
February	174,946	21,968		1,000	1,000	4,348
March	241,602	36,489		10,200		15,159
April	168,558	33,446		4,000	1,000	33,500
May	418,050	85,845		600		
June	170,221	23,406		24,000		
July	151,612	25,273	100		800	11,058
August	406,359	8,686	6,600	7,075	1,325	12,615
September	383,470	62,741	77,800	2,000	2,000	142,600
October	269,976	17,298	13,600		13,600	
November	98,566	13,507	99,341	8,000	5,000	2,287
December	608,406	8,641	17,000	5,000	2,000	31,120
<b>Total</b>	<b>3,255,081</b>	<b>400,333</b>	<b>137,561</b>	<b>62,875</b>	<b>27,725</b>	<b>246,097</b>

1938	Pads	Books Stapled	Books Stripped	Sheets Folding	Forms Multigraphed	Forms Mimeographed
January	250	1,200			40	260
February	35	243			192	172
March	824	1,081			60	174
April	441	1,302			40	117
May		16	16		48	300
June	364				58	102
July		495	115		64	189
August	1,112	490			56	87
September	1,348	4,516			49	98
October	70	9	9		52	39
November	167	187			25	100
December	861	704		600	58	81
<b>Total</b>	<b>5,472</b>	<b>10,243</b>	<b>150</b>	<b>600</b>	<b>742</b>	<b>1,719</b>